

THE
SOUTHERN AGRICULTURIST.

JANUARY, 1836.

PART I.

ORIGINAL COMMUNICATIONS.

The West !

THE charm, which the freshness of adventure, throws around the mere contemplation of those places, far removed from our personal observation, has lost much of that pleasure which to us it once afforded. Few now will find in 'the West!' that source of fanciful associations which used to invest with such interest each legend of the wilderness, which found its way to our quiet homes. Different, far different, is the feeling now produced. To us, it has become that land which has drawn, and which continues to draw off a great portion of our population, upon whom the prosperity of our State depends. A rage for emigration had possessed the minds of our people ; and a wild spirit for adventure presides at their council. All those associations which were wont to connect them to the places which their fathers settled, have now been forgotten. New scenes and new friends supply the places of those which have become tiresome and ceased to interest.

Why then is this? The ready answer is—We have no longer the means of subsistence—our lands are worn out—they yield no longer the necessary supplies—and the claims of a family, render a change, and that for some improvement, positively necessary. Is this the fact? If the West had not been known, would these

reasons have been urged with the same force? Would the 'old soil' have been then found so niggard in her gifts? Would the estate which has descended from some hero of the Revolution—and which has been moistened with his own blood in defence of his home—have passed into the hands of a stranger—while the inheritor of the land and the heir has passed from the roof his father, and gone forth to seek a shelter in the wilderness? Under other circumstances, these things, would not have happened. It is, perhaps our nature. A desire for novelty—a pleasure in the anticipation of something new—and a corresponding distaste for those things which are old—these are the constituents of this spirit of adventure. But through these are "part and parcel" of our nature—yet there are occasions in which they should be held in a wholesome subjection. At times they conflict with the systems of an honest pride—at times they are contraiaint to the dictates of duty. The State in which we dwell—the soil by which we live—the institutions which protect us, and whose purity and countenance we defend, are connected to us by ties somewhat stronger than those things which minister to the momentary delight of the senses. We are the children of the soil—a relationship exist between us. It is the nurse which has supported us in our infancy, which has added bountifully to the means which fostered our manhood—and which has enabled us to delight in the generation who will live to succeed us in our toils and our pleasures. There is no spot of ground, around those places, where our youth was passed, which does not furnish food for the most delightful recollection—and he who would pass through those places where childhood used to sport, unconscious of care, and unburthened with solicitude—where virtue dressed in the comeliest garb of rural contentment, was the goddess who smiled upon each stranger seeking rest in this temple of hospitality—where every thing is calculated to excite the purest and noblest affections of our souls. He who will look upon those scenes, and not find in them a source at once of honest pride, and melancholy pleasure, is stript of much that gives dignity to the character he in part sustains. Who lives, that will not bear testimony to the existence and the force of these feelings? And yet, it would seem that they hang upon some with a hold so weakened, that the uncurbed prompt-

ings of a spirit of novelty will reduce them to nothing, and cause them to be forgotten in the taste for adventure.

To such, however, as still feel an affection for the place of their early childhood, a short appeal will not be unwelcome. Their State is but now recovering from the effects of a long and distracted political contest. A long period of apathy produced by the doubt and uncertainty which violent political contests produce, had tended much to interrupt habits of industry, and to prevent the exercise of those charities, whose existence give a zest to labour, and crown success with the sweetest offering. These disadvantages are fast fading before the awakened enterprise which has infused its wholesome discipline into the conduct of our people. New schemes, of a vast and gigantic character, are engaging the attention of the people, and the extension of commercial relations invite a renewed and active exertion in behalf of agricultural pursuits. Is this, then, the time to stop the horse at the plough, and harness him to the wagon which is to convey us to the West? Surely not. Let us rather continue, and exert, on our part, an enterprise corresponding to that which now animates all classes. Let us put our 'shoulders to the wheel,' and help up the ascent, the car, which, containing the fortune of the State, has been suffered, for years, to remain inactive. Let us continue to keep for our State the reputation which she now possesses, and which has commanded the admiration of all—a tribute, flattering indeed, but inexpressibly dear to those who live within her bosom, and who love her with all the fondness that marks the strongest tie of nature. R.

Orangeburg, Dec. 1835.

On Manures.

[COMMUNICATED FOR THE SOUTHERN AGRICULTURIST.]

The Committee on Agricultural Subjects to the Society for the Advancement of Learning in South-Carolina.

Gentlemen,—Having been honoured by your choice to present to you some agricultural subjects which may be interesting and advantageous to our State, we must, notwithstanding the inadequacy of our knowledge and experience, to do justice to so copious a theme, exert our feeble powers. Relying on your indulgence, we hope to

take such views of the subject as may enable you to glean a few ears from among the stubble.

Although Agriculture is the most ancient, and the most honourable, because the most useful and necessary profession, it is, as a science, as yet, in a surprising state of imperfection. It has always added to the glory of the States which have given it encouragement, and when skilfully conducted, has ever proven a source of individual wealth and national power. We cannot, therefore, bestow upon it too much of our care, nor seek with too much zeal the surest modes of securing the incalculable benefits to be obtained from it. Indisputable as these propositions are, it is a strange anomaly in human affairs, that this, most necessary wealth, and power-giving art has never had a regular footing in the schools of the ancient or modern world, there to be taught with the other Arts and Sciences which have given to man so much cause to be proud of the efforts of his reason and of the flights of his genius. Is it because, it is the most easy and least intricate vocation? The most superficial observers only can look upon it in that light. It is very true that the industrious man, though guided by ignorance, is generally enabled to make a support, and even, in some cases, to acquire affluence; but we must also admit that his exertions are most bewildered, and his success most limited, when a difficulty arises that baffles the routine of his operations.

The knowledge required to form a competent agriculturist, is as profound as it is various. So great is the amount and multiplicity of that knowledge, that we may well doubt the practicability of its ever being all possessed by one individual, be his talents, industry and opportunities ever so great. Every branch of science or of art is directly or indirectly connected with rural affairs. We shall not make the vain effort to enumerate them, we shall only point out a few of the nearest, such as mathematics, natural philosophy, botany and the physiology of plants, and the philosophy of vegetation. Chemistry is also indispensable; for it is in various ways intimately connected with agriculture.

The first principles, however, to which we must confine our labours for the present, include the knowledge of the different kinds of soils, and the adaptation of each to every particular object of culture.

Fertility depends on various circumstances ; for, not only the upper stratum of the soil must be compounded of the proper earths and other substances necessary to constitute a good soil, but the subsoil also must have properties to correspond with the upper. A few inches of the very best soil would be of little avail over a stratum of impermeable clay, or over a thick bed of pure sand or gravel. The former could not afford room for the extension of the roots of plants, and it would retain too much water which would stagnate and destroy vegetation, while the latter would suffer all the water to sink and leave the surface too dry for the desired purposes. It is frequently impossible to remedy the defects of the subsoil ; but, when it is feasible, the upper stratum may be improved by adding to it such substances of which it may be deficient, even to the degree of bringing a very sterile soil to a high state of durable fertility. Indeed, we can see no reason why such soils should not, by proper means within our power, be brought to the very highest state of fertility to which land has ever reached in any part of the world. Land, at the North, has been made to yield upwards of 170 bushels of corn to the acre, which land was probably not originally of the highest grade. We have the same means of improving our land as the people of the North, and we have a more sure climate in our favour. Can any one show that it is impossible to make much of our land equal to the best of Alabama? We think it not only possible, but practicable. In order to do this, however, we should know the constituent parts of those richest soils, so as to know how to form one, the most requisite for fertility.

Many of the Arts, assisted by Science, have been in our day, carried to such perfection, that he who should, only a few years back, have ventured to predict that which we now witness, would have been thought a fit subject for a lunatic asylum. Agriculture is, at the present time, in the state that some of the improved arts alluded to, were a century ago, and no man would now dare to predict what wonders may be achieved in this department, if proper means be adopted and prosecuted with zeal. We venture to assert, that there is not one object of the pursuits of man, more deserving the use of these proper means, and of the most zealous persever-

ance than Agriculture. This is true, with very few exceptions, in every part of the world; how much more then is it of a country like this which is essentially and exclusively dependant on the produce of the soil. This is emphatically true of the South-eastern States. Depend upon it, not only your prosperity; but your independence, nay, probably, your very existence rest on the exertions now recommended. We shall not say, Gentlemen, for your own sake, but for the sake of your wives, children and their posterity, and for you own posthumous fame. Reflect on this, and act promptly.

Arable soils are composed of silicious, aluminous and calcareous earth, to which may be added the magnesian. This last is most frequently absent, and its use, as a component part, is not yet well ascertained. It is supposed not necessary to the formation of a fertile soil. The other earths in due proportions, with a suitable quantity of vegetable and animal matters, or putrescent manures, form the richest soils known to agriculture. Either of them, by itself, is perfectly inert and sterile. The first, viz. *sand*, is usually, if not always the most abundant in all cultivated soils, even in those denominated aluminous or clay soils. The third, viz. *calcareous earth*, which is most generally in the form of carbonate of lime, is the least in the component parts of fertile soils. Siliceous and aluminous earths are never absent in cultivated land; but calcareous earth is frequently so, at least, in a perceptible degree. Without it, however, no soil is naturally or can be made by art permanently fertile; for although putrescent manures exert their fertilizing powers, when no calcareous earth is present, their beneficial effects are comparatively evanescent. We have said that neither these constituent earths, by itself, is otherwise than perfectly sterile. We have sufficient proofs of it in the chalks of Europe, and the bald prairies of our western country, as regards the calcareous earth; and we need not point out to examples of pure sand, or pure clay to prove our assertion.

From what proceeds, it is evident that, when it is desired to ascertain the qualities of a soil, it is best done by analysis, by which alone the proportion of each of its component parts can be ascertained. If it be found that one of the necessary earths is wanting, or is insufficient in quantity, such a soil can only be rendered fertile

by supplying the deficiency. We have said that of the three principal earths, the calcareous is the most frequently deficient, and this is unfortunately the case in a great portion of this State. But although it is most often found wanting in the upper soils, we are not left quite destitute of resources; for, in a considerable section of the country, all below the falls of the rivers, rich and extensive beds of carbonate of lime, in the shape of fossil shells, are to be found a few feet below the surface, and these can supply the deficiency. By means of these very extensive strata of shells, immense tracts of land in the low country, which are now abandoned as exhausted, can be, not only restored to their primitive state, but also be brought to a state of fertility far above that which they ever possessed. It cannot be denied that to perform this requires much labour, and your committee do not pretend to free you from the original sentence passed upon us: "In the sweat of thy face shalt thou eat bread." The question then is, is it worth while to undertake such a great work at the cost of so much labour? Or is it not better to abandon our impoverished State and seek fertility in the western wilds? Too many, far too many have already taken the latter alternative, and the population and wealth of our dear State are far removing to the West. If this system of emigration is persevered in, we ask, in dread, of the answer, we ask with the feelings of men exposed to the most imminent danger, what is to become of the State, the glorious, the hospitable, the chivalric State of South-Carolina? We wait not for an answer; but we bid, or rather pray you to turn your eyes towards Italy, to the *Compania di Roma*; to the former mistress of the world, herself, and there, the answer is most solemnly written in most distinct characters. That country, once the garden and pride of the world—the dwelling place of its masters—where is all its glory?—Gone, gone for ever. The palaces and gardens of the Cæsars, and of all the great names which are yet the pride of history, are all replaced by infectious marshes, where nothing but desolation, misery and death can abide. Say not, Gentlemen, that we exaggerate the prospect before us, that, at all events, such a condition is far from us. We hope it is very distant, and pray that the similitude may never be realized. But where are now the elegant abodes of hospitality, those palaces that, not many years since

adorned the avenues to the good city of Charleston for many miles? There is scarcely any thing left of them except the magnificent lines of live oaks that led to them. These now act as the *ignis fatuus*, and entice the stranger in the hopes of finding the hospitality which seem promised at their termination, when he finds a void, if not a dangerous morass. The great cause of the calamitous change that has thus taken place in Italy is the neglect of Agriculture, by which the fair fields of productiveness became noxious and dismal morasses, yielding the deadly malaria, instead of the rich harvests of corn and luxurious gardens. You will say: 'but the Goths and Vandals came and ravaged that country, and began what sloth and luxury finished.' True, they did come; but are we not also threatened with the Goths and Vandals? Shall we, like the Romans, suffer sloth and luxury to cause our ruin?

The efforts of the Southern States should be directed to the encouragement of a middle class of population, and let every avenue be opened for this class to take rank with the first. For this purpose, Education should be promoted by every possible means, and no reasonable expense spared to attain this most valuable object; for it is the moral power of a state, as Agriculture is its physical one. For this reason, the advancement of learning and the most durable amelioration of the soil, should be the great objects of our unremitted efforts. By these means only can we ever be powerful and retain our present property, nay, our independence. This, we are satisfied, cannot be done without the fullest co-operation of our richer and more intelligent class of citizens.—Even though the immediate and direct improvement of this class should not follow such efforts, yet the trial should be made. Advance rural science, and every inhabitant will be benefited; for there is really only one prominent interest in this State, and that is Agriculture. The others are all dependant upon it. It appears to us, Gentlemen, that the administration, or rather the constitution of our State Government is defective in its arrangements; and we throw out the hint, that it may be duly considered. It seems to us that every department of our interest should have a competent officer at its head. In our financial department, we have a Comptroller and a Treasurer. Why should we not

have a Minister of Instruction and one of Agriculture? These two most essential officers, if well chosen, would undoubtedly superintend their respective departments to the great advantage of the State.

We need principally knowledge and population, and from any degree of increase of them, a proportional increase of wealth is the necessary consequence. With these, and the exertions we are capable of, we could defy the worst efforts of our enemies, and rise triumphant from the conflict. By industriously spreading knowledge among our planters and farmers, we shall so increase the fertility of our soil, that our citizens will cease to look westwardly for rich lands, and patriotism, aided by self-interest, will save the country.

The first stage towards the accomplishment of this most desirable object is the inquiry, 1st. Whether our soil needs, and is generally susceptible of the improvement possessed. 2d. Whether we really possess the materials to effect it; and 3d. Whether these materials are to be obtained generally, at such a moderate expense, as to warrant the undertaking.

To answer the first query, to the satisfaction of reasonable men, we must show—that it has been done on similar lands in other countries. This we shall endeavour to do very briefly. The very few scientific examinations and analysis of our various soils, leave us but a narrow field for our research; but, by a comparison of the soils of this State with those in similar situations below the falls of the rivers in Virginia, Maryland, and other States, where the soils have been analysed, we are warranted in asserting that they are similar, and in the two States named, such lands have been vastly improved by the means here proposed; for they were generally found deficient in calcareous earth, except in extensive beds of shells below the surface. Our worn-out fields may also be deficient in vegetable matter; but this is so easily supplied from the leaves of our forests, the inexhaustible beds of vegetable earth in our swamps, along the margin of all our water courses, from the spring branch to the largest river or bay. It may also be had in such abundance from every pond, and the steep sides and bottoms of every rising ground, that we may say that every man has at hand the means of supplying this deficiency. It is somewhat different, however, with the sup-

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plies of calcareous matter. But this is the object of the second query.

The immediate vicinity of the sea has the advantage, besides sea-cose and sedge, of fresh shells, which may either be pulverized by burning, or which would be far more beneficial, though, perhaps, more expensive, by being coarsely ground immediately before they are spread on the land and ploughed in. By the process of burning, all the animal matter of the shell and of the animal it contained, are lost, and the lime thus produced, is, perhaps, not so generally fit for all kinds of land as the other, unless it is exposed a long time to the air to regain the carbonic acid of which the fire has deprived it. Lime in a caustic state, however, is sometimes preferable to the carbonate; as when it is to be applied to land overburdened with coarse vegetable matter, as is the case with land uncleared or which has just been cleared. For all the other lands, the chief dependence is on the great deposits of fossil shells, which are visible on the surface, in some places, and in others on the banks of rivers, creeks, gullies, and such other places. Great strata of them are known to exist from the sea-board up to Orangeburg, or above, in the direction of Columbia. When we shall be fully impressed with the immense value of these deposits, and search for them, many localities of them will undoubtedly be found in favourable situations. Wherever they have been used in similar situations as the tract of country in contemplation, most of these beds of shells have been found inexhaustible. Parts of the upper country is abundantly supplied with calcareous matter in its marbles and lime stones. The materials are then to be had in abundance.

To answer the third query, we must inquire into what has been done in other countries or States, and what is usually the expense.

We have, on this subject, the undoubted testimony of almost every European writer on agriculture. In those countries, carbonate of lime, in the form and by the name of marl, has been used to restore fertility to land from time immemorial. Lime, in a caustic state, has also been much used for the same purpose, and when applied with judgment, the result has always been satisfactory. Sir H. Davy says, (p. 182,) in his *Agricultural Chemistry*: "The labour of improving the texture or the constitution of the

soil, is repaid by a great permanent advantage, less manure is required, and its fertility insured; and capital laid out in this way, *secures forever, the productiveness, and consequently the value of the land.*" Also, in another place, (p. 164): "The soils which contain the most alumina and carbonate of lime, are those which act with the greatest energy in preserving manures. Such soils merit the appellation which is commonly given to them of rich soils; for the vegetable nourishment is long preserved in them, unless taken up by the organs of the plants."—James Anderson, L. L. D. in his *Essays relating to Agriculture, &c.* says, (p. 169): "Lime is the most universal manure for unproductive land. Of all the manures that can be obtained for improving waste lands, nothing is equal to lime, or other calcareous matter." And in p. 198: "I scruple not again to repeat, for it cannot be too strongly inculcated, that lime, or other calcareous matter, applied in large quantities, must form the basis of all radical improvements of waste lands. Lime tends to sweeten the grasses, produced on every soil, to which it has been applied, so as to render them more palatable to all animals; it augments the quantum of the produce considerably; it thus renders the ground capable of sustaining a greater number of beasts. These, of course, produce more dung, and that dung if applied in conjunction with the lime, will produce greater and more lasting effects than it could have done without it. It would seem that heaven with a view to reward the industry of man, and to set no limits to the melioration of the soil, had disposed this universal fertilizer over our globe, as to bring it within our reach, by the exertions of human industry, almost every where. Whatever, therefore tends to facilitate the acquisition of this manure to any particular place; whether by means of roads, canals, or any other device, must be considered as amongst the most useful of human exertions."

The quotations, from these two writers must suffice, although numerous others, both from Great-Britain and the continent, might be advantageously added, were it not for the fear of rendering this memoir much too voluminous. We cannot, however, refrain noticing something of this kind of improvement, that has been lately, and is now going on in increasing progress in some of our sister States, principally in Virginia. That most interesting

work lately published by Mr. Edmund Ruffin, of Virginia, entitled, "Essays on Calcareous Manures," second edition, together with his most invaluable monthly periodical, the "Farmer's Register," (publications which ought to be in the hands of every planter or farmer that can read) have already produced in the short space of little more than two years, very great improvements in the State of Virginia. These works give such undoubted proofs of an increased zeal, in the planters and farmers of that country, as redounds, not only to their honour, but also greatly to their profits. Wherever it is found practicable, the beds of fossil shells are sought for, and transported on the worn-out or even on fresh lands, at an expense which may appear great in this country, where we are unused to such exertions, but in reality small when compared to the great increase of the crops. By means of these calcareous materials, fields which formerly produced 8 or 10 bushels of corn to the acre, and other grains in the same proportion, produce now 30 or more, and the land is thereby made fit for the production of wheat and clover, followed by another crop of corn or cotton. We cannot here enter into details, although they are most interesting; but we should not be doing justice to our subject or to our country, were we to neglect the mention of another very great advantage which is found to be derived from the same application of calcareous earths to the land, and that is, that the health of the country has been considerably improved by it. The short time that this invaluable manure has been used in the low country in Virginia and Maryland, does not only afford the most positive evidence of the permanence of this last mentioned benefit, but, from analogy, we are warranted in our hopes of the most permanent advantages from it. The city of Mobile, from being some years ago, a very sickly place, is now, and has been for a few years, a most healthy one. This is chiefly to be attributed to the paving of its streets with shells, and the filling up of the sunken and marshy places, and covering them with the same materials.

The use of lime in its caustic state for the purpose of disinfecting cementeries, butcher-pens, &c. has been known from time immemorial; but that these great benefits could be extended over a large extent of country, seems a discovery that had been reserved for our own

times. It is found that the carbonate of lime possesses this disinfecting power in at least as high a degree, and are preferable to the caustic lime, except when it is desirable to consume the noxious, putrescent matter. The greater cheapness of the carbonate may render it useful with that view alone; and may be used to cover battle-fields, which besides the butcheries they have witnessed, frequently produce diseases in the country around. It is somewhat singular, that this most interesting fact was discovered in Europe, about the same time, that it was announced here, by Mr. Edmund Ruffin, as we find at the very moment we are writing this, in his *Farmer's Register* for November.

An obvious question here intrudes itself. Can this be true? Has lime either caustic, or as a carbonate the wonderful effect of destroying the affluvia of putrefying vegetable or animal matters, which are considered as the greatest cause of bilious diseases? We then ask emphatically: is it true that lime is used effectually, in preventing the bad smells arising from offensive places, from the receptacles of filth—has it not for centuries been the practice of throwing lime over the corpses that were buried in churches to prevent infection? Can we doubt the fact related by Mr. Ruffin, in his "*Essay on Calcareous Manures*," of an experiment which he has made, of covering the carcass of a cow, which had died in hot weather, with calcareous earth or fossil shells, by which all offensive smell was prevented, and all the gasses produced by the putrefaction of the carcass, were evidently absorbed by the carbonate? Can we doubt the experience of ages on a point connected with this subject? If all this be true, it must necessarily follow, that the same means used on an extended scale must produce a commensurate effect. Now that we have a clew to guide us in our reasoning, may we not fairly attribute the well known healthiness of the town of St. Augustine to the same cause. A considerable part of its vicinity is covered with shells, its houses are formed of a stone, which is composed of small shells, and its streets are paved with the same materials.

Persons who have not extended their views on this subject, far and near, can scarcely have an idea of the vast and multifarious advantages, that can be derived from a plentiful use of calcareous matters in agriculture. It is well known that many valuable plants grow thriftily, only

on soils either naturally calcareous or artificially made so. Among them we shall only notice such plants as bear papilionaceous flowers. Of this class are lucern, clover, &c. It is frequently asked why these two most valuable plants will not thrive in this State. The fault has been sometimes attributed to the great heat of our summers, to the long droughts which frequently occur here, when these plants are parched and killed. It is most probable that the true answer would be, that our soil is too deficient in calcareous matter. The temperature of the State of Virginia, at an equal distance from the sea, differs very little from that of our State; and clover grows well there in suitable soils. It is, moreover, most positively ascertained, that calcareous lands are much less affected by droughts, or by too much rain than others. It seems, then, most probable, that we have it in our power to cultivate here these two grasses, and have our clover fields as well as our neighbours; from which they derive almost incredible benefits. By means of clover, they are most undoubtedly enabled to enrich their lands, to any extent they please, according to their industry and intelligence. After clover, cotton, corn, or any other grain grows admirably well. These advantages are truly incalculably, and they are, at least, to a certain, if not, to the fullest extent, most unquestionably within our reach. We need but will it, and put our shoulder to the wheel, and we are in the enjoyment of them. It is certainly with exceeding regret that we feel ourselves compelled to exhibit the state of our agriculture in such an unfavourable light; but the truth must be told. We are most fortunately, at present, in a state of peace, and therefore, of prosperity; but we act as if this state of things could not possibly ever be changed. With an abundance of fertile soil, we are dependent on others for our bread and meat, as also for our riding and carriage horses and working mules. If our ports were now to be blockaded by an enemy, we should be in a sad predicament, without either bread or meat in the State sufficient for its own support. It is true, that our neighbours would furnish us with these articles of first necessity; but it could only be at such prices as would make both the rich and the poor suffer. This should not be.

Respectfully submitted by

N. HERBEMONT,

Chairman of the Committee on Agriculture.

Agricultural Reports.

To the Editor of the Southern Agriculturist.

Sir,—The great interests of agriculture, like those of commerce, require the general diffusion of information, not only in regard to modes of cultivation, but also to the progress of the crops, in the various departments of our wide spread Southern country: the weather for culture and harvesting, and the prices for commodities. To these purposes, the Agricultural Societies of England and Scotland, give particular attention, and their reports are made monthly or quarterly to the agricultural journals of those countries; and the prices and consumption are regulated in a very great degree by the accurate information through these channels. Something of the kind has been done in some parts of this country, by committees of Agricultural Societies; but entirely too local and on too limited a scale, for any great public advantage to be derived from it. We would now propose, Mr. Editor, to the Agricultural Societies of the Southern States, especially of the cotton and rice growing portions of them, to imitate the European societies referred to, and to make your periodical, the channel for communicating to the public their reports, at such stated periods as they may determine upon. A few reflections may shew the very great advantage which this country would derive from such a plan.

At present, we depend on the uncertain, and casual, and too often interested information of persons directed in influencing the prices of our commodities by selfish objects. Speculators who design entering the market, precede their operations, by communications calculated to promote their views; and the interests of the great body of our planters are often largely sacrificed by such management.

It may be said that Agricultural Societies might be partial in their reports, with the wish to enhance the prices. But this cannot be the case with well informed men; and would be out of the question with men of integrity. Narrow minded, indeed, would be the policy, to augment prices by false statements. The prosperity of the country at large, depends much more on the steady, than high fluctuating prices of its productions. Planters and farmers are seldom disposed to become speculators: I rarely indulge such a propensity with impunity. High

prices disturb the policy of every thing else. Give a fictitious value to dollars, and consequent upon it, a fictitious value will attach to lands, negroes, grain, wages, &c. The purchasers at such prices, not only of the cotton, but the grower of the cotton who buys the home articles will often be ruined by the reaction, and increased depression which usually attend it. Creditors will suffer by the ruin of their debtors, and the country become at one time a scene of extravagance, and at another, of distress. Such a state of things can never be desired, and, however, it may sometimes be the design of men, who calculated on a temporary advantage, to impose in a manner to produce them; communities of men of any degree of any intelligence can never be so mad as to do so. With them, the truth will be the only safe, as it is the only honest policy.

The plan then that we would suggest to the Agricultural Societies of each district or section of country, (and where there are none we would strongly recommend, that they should be established,) is the appointment of committees in such neighbourhoods, as would be most convenient. From these reports, quarterly reports might be consolidated for publication. In them, the quantity of land planted in cotton, and corn, or rice, &c.; the prospect of the crops; the state of the weather; the scarcity or plenty of provisions, in general use, for labourers and cattle, and the demand of the neighbourhood for supplies of every description should be impartially stated. Now if this were done, with any tolerable degree of accuracy, it is clear, that the approaching market for the great staple would be so correctly anticipated, as to enable very just calculations to be made by each planter of the proceeds of his crop, which will make him to regulate his expenditures accordingly. Besides that anxiety to be early in the market, which causes it to be flushed, and glutted, and injured; and the extravagant calculations which are made upon much larger supplies, than are realized, by which the whole crop is injured, would be very often avoided. Another great benefit of such a system of reports, would be that prices would be equalized, and the wants of neighbourhoods supplied, which otherwise would never be heard of beyond their precincts. Suppose a neighbourhood which from deficiency of grain crops, or disease among the cattle and swine, would

see in prospect a want of these articles; the reports making this public, would surely bring the supply required, and so in regard to every thing else. But it is not necessary to insist on such common-place truths. In the commercial world they have been long practised, and are thoroughly understood. All that we desire, and now strongly recommend, is that they should be also applied to the agricultural interests of this country. The assistance of Agricultural Societies is necessary for this purpose.

A READER.

The suggestions, of our correspondent, are exceedingly valuable, and ought immediately to be attended to by our agricultural communities. It has long been desired by us, that the plan proposed by him, for the extension of information, concerning our planting and horticultural interest, should be extensively diffused; and for that purpose we particularly invite our planters and Farmers, to favour us with reports of their proceedings, the result of experiments, the management of crops, and such statistical views upon these subjects, as they may be enabled from time to time to furnish. Agricultural Societies formed in each District of this State, by collating facts and experiments, and publishing them for the public benefit, would greatly stimulate the zeal of our planters, and bring forth, we have no doubt, many improvements in planting and husbandry, which would otherwise remain dormant, or become slowly developed. Associations of this kind would be extremely valuable, as they would tend to embody and give permanence to many experiments and facts, which would lead to others; and thus form a body of agricultural knowledge that would be of incalculable benefit and advantage to ourselves and those who are to succeed us. So many subjects are connected with the economy of husbandry, that there is always something worthy of public communication. The interchange of sentiments between intelligent agriculturists, would of itself, perhaps, be the foundation of many valuable improvements. In a section of country like that of ours, where so much wealth is drawn from the soil, and such extensive fields for observation and improvement are laid out before us, it is to be lamented, that the advance in improvement has not been at all commensurate with the importance of the subject. Even the minor objects of planting, presenting so many interesting minutiae, seem to be generally pursued without reference to improvement. This arises either from ignorance or a want of exertion. Our small planters being disposed, rather to follow the track laid out by their ancestors, than risk a departure, for fear of a diminution or loss of crop. Associations, such as these suggested by our correspondent, would give a stimulus to the exertion of these men, by enlightening their understandings, pointing out their true interests, and exciting them

by examples. Why cannot our agricultural community be framed after the plan of our commercial? The latter by establishing a correspondence with various parts of the world, by frequent meetings, and by interchanging their facts or views, have built up commercial principles which will be as enduring as trade itself. Every portion of the globe will become acquainted with the transactions of the other, and will be thereby enabled to shape the course of business as circumstances may direct. In our agricultural communities, the thing is very different; in our own little State it is not uncommon for one district to be totally ignorant of what is going on in the next. Every one pursues his his own plan according to his own judgment, without asking advice from those on his right, or interfering with those on his left. We want to see things otherwise. As there is a community of interest among planters, we want to see a concert of action among them; we want to see them eschew selfishness, and whatever plans or discoveries they may make, to let the whole community benefit by them. This cannot be done efficiently unless we form agricultural associations, based upon liberal views, and ardent in the improvement of the science. We cannot urge too strongly upon our readers to reflect deeply on this subject, and to remember that in thus increasing their individual wealth, they will advance the honour and dignity of our State.

To associations of this kind, we tender most cheerfully the use of our pages, as a vehicle for the transmission of all their proceedings and reports; and we give the assurance to individuals, that all essays and facts, connected with the objects of our work, furnished to us for publication, shall find in it a ready place.—*Communicated for the Editor.*

Pride of India as a Manure.

Mr. Editor,—It affords me the greatest pleasure to learn, that so valuable and useful a journal as that of the *Southern Agriculturist*, has passed into your hands. I trust that your undertaking will be as successful as it is laudable; and with a view to add my mite towards furthering your efforts, I herewith send you a communication on the uses of the “Pride of India Tree as a Manure”—published many years since in one of our daily papers.

The plan proposed, I have adopted as a system ever since its publication first met my eye. And there are many, who along with myself, can testify as to its complete success. A friend of mine, on one of the islands, has at my suggestion used the Pride of India as a manure for his cotton; and another of them in Barnwell District, has, for years back, tried its leaves and berries as a manure for his corn. To both of these gentlemen I have written, and as soon as they favour me with the result of

their respective trials, I shall present them to you for publication in your journal. A FRIEND TO IMPROVEMENT.

COMMUNICATION.

“ Having many Pride of India trees about my house and yard, I have made it a practice to trim them the time of the year when the foliage is about to fall, in order to get at once rid of the dirt, occasioned by the leaves, and berries; and knowing from experience that they are possessed of strong vermifugous qualities, the thought occurred to me, that they would be a good mixture with my heap of stable manure—I accordingly had the small fibres, with the seed and leaves, spread to the thickness of eighteen or twenty inches over the heap, and turned my horse on them as litter; this added considerably to the quantity of my manure, and I find that the land on which I put it, though in a very undigested, half rotted state, and in which I have planted cabbages, snap beans, spinach, okra, and peas, had not a plant cut by the grub, or any other worm or insect. If this, on further investigation, may justly be found attributable to the vermifugous qualities of the Pride of India, in destroying the insects in the embryo or egg state, in the manure on land, does it not hold out considerable inducement for the cultivation of that valuable tree? And does it not open a field of rational investigation, to the philosophic cultivator, in procuring manures and infusions from plants, that are in their nature deleterious to the insect tribe. The Pride of India is remarkable for this quality, and is rejected by insects of every kind, who, no doubt, are guided by unerring instinct. Is it not then reasonable to suppose, that water, in which it is infused, sprinkled on cotton, &c. would prevent the ravages of that intruder on human industry, the caterpillar? INVESTIGATOR.”

The Use of the Plough in Ditching.

To the Editor of the Southern Agriculturist,

Sir,—As this is the season of the year, when many planters commence overlooking their ditches, a few remarks, upon the subject of ditching with the plough, may not be inappropriate.

Until, within a few years back, I found this part of my agricultural labour, not only very difficult, but exceedingly tedious. Let me add, that to such of us, as are in the habit of planting the long staple cottons, good ditch-

ing is more than one half of the planter's success. It is all important then, that we should have some plan for doing this business, in the most expeditious, as well as the best mode. As a means of accomplishing both of these *desidera*, let me suggest to your readers the use of the plough.

My cotton land, I ditch every task. Some parts of it, I ditch every half task. My mode of doing so, is the following. As soon in January or February as possible, I mark out the line, I wish my ditch run. I then, with the Daggon plough, commonly used, cut a deep furrow down one side of the line, and return the other side, performing the same operation. With a strong horse you can sink the plough fully three quarters of a foot. This, will give you the outline of your ditch. The ditchers, next follow; and with their spades or hoes, throw out of the ditch, made with the plough, the dirt or sods which have been thrown up previously. It is to be remarked that the running of the plough, will have given each side of the ditch a very smooth, and what in all ditches is greatly to be desired, a slope, inclining to an angle at the bottom of the ditch. Indeed, so perfectly smooth will the ditch be cut by the plough, that in any thing like clayey or stiff land, it will be almost unnecessary to touch the sides with the spade afterwards. Thus, you will perceive that all that will be required of manual labour will be the throwing out of the loose dirt or sods, which the plough has made—a task which can be done with an expedition almost incredible to some who have never witnessed this mode of ditching. Formerly, I found the great difficulty of this labour, to consist, in cutting out the sods with the spade. My best hands seldom, if ever, did me more than one task, (105 feet) of new ditching. By the present mode, one hand, with the previous work of the plough, can with ease accomplish from three tasks to one acre. The dirt taken from the ditch, I always throw upon one side of the ditch, in order to have one side of my beds always higher than the other. This gives an additional declivity to the land, and suffers the water to run off freely. Where I can get my land listed in the summer, I prefer it; for then, I can make my ditches lower in the winter, and scatter the dirt from them with more accuracy. You may, perhaps, hear from me again upon this subject. For the present, I remain with much esteem,

A SEA ISLAND PLANTER.

PART II.

SELECTIONS.

On Draining.

From the "Elements of Practical Agriculture," by DAVID LOW, Professor of Agriculture in the University of Edinburgh.

[FROM THE GENESEE FARMER.]

PRINCIPLES to be ever kept in mind by the tillage-farmer are to keep his land dry, rich and clean. The first in the order of these principles, and an essential one to be regarded in cold and humid countries, is to keep the land dry.

While a certain portion of water is essential to vegetation, an excess of it may prove greatly injurious. In the colder countries an excess of water is one of the main causes of infertility, and a primary object of the husbandman there is to carry it away from the ground.

The water which falls from the atmosphere does not sink to an indefinite depth, or to a great depth in the earth. It is either retained at or near the surface where it falls, and whence it is evaporated, or it finds its way to a lower level, by channels upon the surface, or in chinks of rocks, or beds of gravel, sand and other permeable substances beneath the surface.

The purpose in draining is when water stagnates at or near the surface, or when, having penetrated to pervious substances below the surface, it is finding its way to a lower level, to confine it to a determinate channel, and carry it away by some convenient outlet, in order that it may not overflow or saturate the soil.

The substances through which water finds its way with facility are the looser earths, sands, and gravels, the crevices of rocks, and beds of loose or decomposing stones: the substances which resist its progress are clays and the harder rocks.

When the soil rests on a retentive subsoil, whether of clay or pervious rock, it forms a species of reservoir for water, absorbing and retaining it. The object of the drainer in such a case is to give egress to the water in fixed channels or drains. This is partly effected by the common ditches of the farm, partly by the open furrows of ridges always described; and, when these are insufficient, by cutting trenches in the hollows, or where best suited to effect the purpose. These trenches are either left open, or they are filled to a certain depth with small stones or other substances, through which the water may percolate; and then they are covered again with earth and soil, so that the plough may pass over them in tillage.

When water overspreads the surface, or is absorbed by the soil, and is unable to penetrate to the looser strata below, the carrying it away in channels is termed *surface-draining*. When it has already pene-

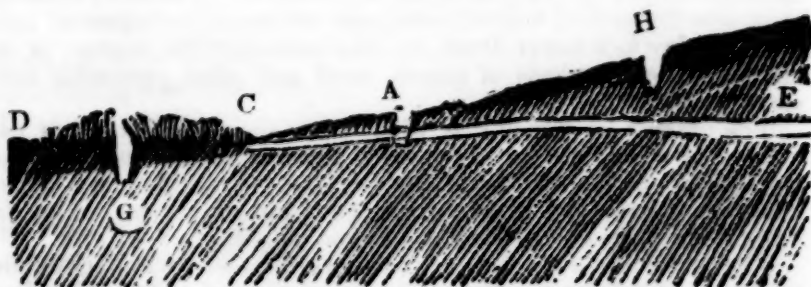
trated into the earth, and is contained in reservoirs there, or is finding its way to a lower level through permeable substance below the surface, the confining it to a fixed channel is generally termed *under-draining*. These two purposes of the drainer are constantly combined in practice, but yet they are in some degree distinct. It is the intercepting of water below the surface that constitutes the most difficult part of draining, and which requires the application of principles which is not necessary to apply in the case of surface draining.

If we shall penetrate a little way into the looser portion of the earth, we shall generally find minute stratification, consisting of gravel, sand, or clay, of different degrees of density. These strata are frequently horizontal, frequently they follow nearly the inclination of the surface, and frequently they are broken and irregular. Sometimes the stratum is very thin, as a few inches in thickness, and sometimes it is several feet thick; and sometimes the traces of stratification disappear, and we find only, to a great depth, a large mass of clay or other homogeneous substance.

When these substances are of a clayey nature, water finds its way through them with difficulty; when they are of a looser texture water percolates through them freely. These, accordingly, form the natural conduits or channels for the water which is below the surface, when finding its way from a higher to a lower level.

When any bed or stratum of this kind, in which water is percolating, crops out to the surface, the water which it contains will flow out and form a burst or spring, oozing over and saturating the ground, as in Fig 1, which represents a section of ground from C to D.

Fig. 1.



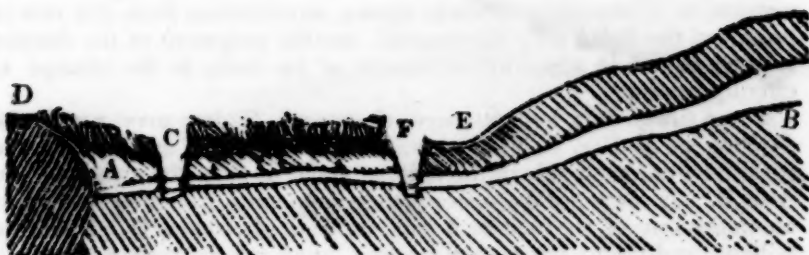
When water is, in like manner, percolating through one of those pervious strata, and meets any obstruction, as a rock or bed of clay at A, Fig. 2, it is stopped in its progress, and by the pressure of the water from a higher source, it is forced upwards, and then saturates the superjacent soil, as from D to E, forming springs, or a general oozing.

In either of these cases, and they are the most frequent that occur in practice, the object of the drainer is to reach the water in its subterraneous channel before it shall arrive at the surface, and to carry it away in a drain.

By cutting a drain at A, Fig. 1, the water of the stratum of sand, C E, is cut off before it reaches the surface at C, where it forms a swamp CD.

In like manner, in Fig. 2, by forming a drain at C or F, the water is cut off in its channel AB, and thus in relieving the pressure from the higher source, by giving egress to the water through the drain, the cause of the wetness from E to D is removed.

Fig. 2.



In looking at the sloping surface of any tract of ground, as a field, in which there was an oozing or bursting out of water, we shall generally distinguish the line where the wetness begins to appear on the surface, extending over a considerable space, *xxxx*, Fig. 3, the effects appearing in the wetness of the ground farther down the slope, as *yyy*. The line where the wetness begins, and which is generally rendered perceptible by the change of colour of the soil, the tendency to produce subaquatic plants, and other indications of wetness, marks for the most part nearly the course which the line of the drain should follow. By cutting a drain nearly in this line, as from G to A, and from L to A, sufficiently deep to reach the porous stratum in which the water percolates, we shall intercept it before it reaches the surface, and by carrying it away in some convenient outlet, A B, remove the cause of wetness.

Fig. 3.



This accordingly forms, in the greater number of cases, the rule adopted in practice for the laying out of drains upon the surface, the line is drawn nearly at or a little above, the line of wetness, or, to use the common expression, between the wet and the dry.

Should the line of drain be drawn too much below the line of wetness, as at G, Fig. 1, then the trench would fail to intercept the water; and further, if it were filled with earth, stones and other substances, in the way to be afterwards described, the whole or a part of the water would pass over it, and the injury be unremoved.

Again, should the line be too much above the line of wetness, as at H, the drain would fail to reach the channel of the water, and so would be useless.

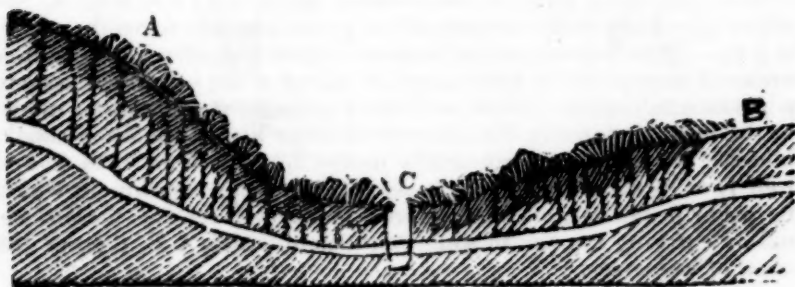
It is for this reason that, in common practice, the rule is, to draw the line of the drain nearly between the wet and the dry, or a little above it, taking care to give it the necessary descent, and to form it of

sufficient depth to reach the pervious bed or stratum in which the water is contained.

But as water may arrive at the surface in different ways, and the wetness be produced by different causes, so variations from this rule of lining out the drain may be required, and the judgment of the drainer is to be shown in adapting the course of his drain to the change of circumstances.

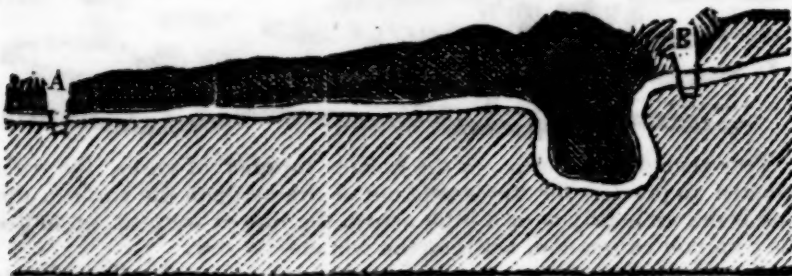
Some times, in a hollow piece of ground, feeders may reach the descent, as in Fig. 4, and the water may be forced upwards by the pressure from each side of the hollow, and thus form the swamp, from A to B. It may not be necessary here to cut a trench on each side along the line of wetness at A and B; a single trench C, cut in the hollow, and giving egress to the water, may relieve the pressure and remove swamp.

Fig. 4.



Sometimes upon a sloping surface, one pervious stratum, in which water percolates, may produce more than one line of springs, as B and A, in Fig. 5. Here a single drain cut at B will remove the cause of wetness at both swamps, without the necessity of the drain at A.

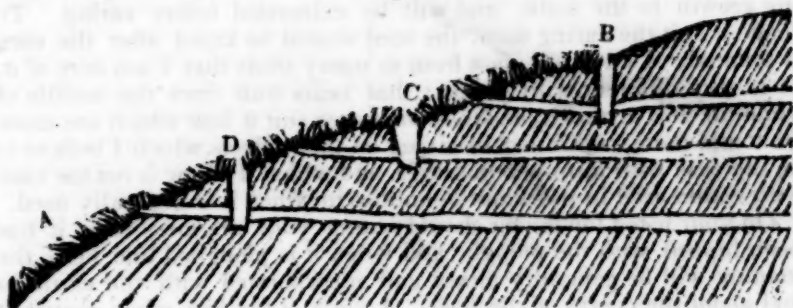
Fig. 5.



And, in practice, it is well to wait to mark the effects of a drain cut in the higher part of the slope to be drained, for these effects often extend further than might be anticipated, removing springs, bursts, or oozings, at a great distance.

On the other hand, a single swamp, as from B to A, in the Fig. 6, may be produced, and yet one drain at B may be insufficient to remove it. In this case the water being brought to the surface by more than one channel, it is necessary to form several drains to reach the several beds in which the water is contained, as at B, C and D.

Fig. 6.



These examples will show, that one rule, with respect to the laying out of drains, is not applicable to all cases, but that the drainer should adapt his remedy as much as possible to the cause of injury. One object, however, to be aimed at in all cases of under-draining, is to reach the bed, channel, or reservoir, in which the water is contained.

Cultivation of Cotton on the Prairie Lands.

[FROM THE FARMER'S REGISTER]

I think I closed my last letter to you, with urging the necessity of listing the lands intended for cotton the ensuing year. By that thrifty process all the stalks of cotton and corn, and all the offal of them, are placed in a deep furrow immediately under the crop to be grown. A plantation so prepared possesses these advantages:—All that grew on the land, and all its rubbish are placed out of the reach of impeding either hoe or plough in the working of the crop, and in such a position about the roots of the growing plant, that it receives all the benefit of the manure, and it gives a depth of soil immediately under the plant, that ought to make it bear a drought well. It has another advantage: you can plough up and make your beds in any part of the field that your land may be in order, and the rows will all fit to each other when the whole are done. There is yet, perhaps, another advantage, though I do not speak of it with confidence—it is, in a great measure, a remedy for the rust. The rust is a disease that is increasing, and has done more injury than any one disease. I will mention three experiments I have made. In 1833, on such parts of the prairie as I suspected rust, I manured with cotton seed, and its effect was only to postpone the time of rusting. Thinking that the quantity used was too little, and its effects too soon gone, I manured the same ground more heavily in 1834, and it did not rust. This year the same lands have been manured again, and parts of the same with stable yard manure, and so far there is no appearance of rust. I think stable yard and cow-pen manure on cotton, better than cotton seed, so far as a short experience has gone. So I think cotton seed is a better manure for corn. The reason for that fact will be found in the nature of the plant, and the manner of the action of the manure. Cotton seed is the most powerful in its action, and the quickest over in its effects. Corn is rapidly in perfecting its grain, so soon as the bearing stage commences—which is at the time it commences to shoot and tassel. From that time, in one month the grain is ripe, and the manure no longer of use to it. Cotton seed is so short lived in its effects, that if

it be rotten at the time the corn is planted, it will expend itself in giving growth to the stalk, and will be exhausted before earing. To make it suit the earing time, the seed should be killed after the corn is planted. I know this fact from so many trials that I am sure of it. It is very different with cotton; that bears fruit from the middle of June till frost arrests it, and those manures suit it best which are more slow and more continued in giving off their effects, which I believe to be the case with farm-pen manures, and which I know is not the case with cotton seed in the small quantities in which it is generally used.

On your listed lands you should scatter your manures after it has been lapped with the plough, and when it is ploughed into beds, the manure will be generally mixed and incorporated with the earth in and about the centre of the beds. I think it too low when scattered in the furrow before laying the cotton or corn stalks, and also too low when on them before they are lapped. I think light manures will not sink into the earth, but will rise; and indeed that they are subject, like every thing else, to that law of nature which makes what is heaviest go down, and what is lightest, come up. You may scatter your manure in a trench in the tops of the beds after they are made up, but it will not be so convenient a time, as to work, as before they are ploughed into beds, and it will be more apt to get within the influence of the evaporation of our powerful sun.

Your fields are now all listed; all that grew on them the preceding year has been turned under the earth, in the most suitable situation to secure it from evaporation, and for its beneficial effect on the intended crop. It is all rotting and becoming manure for you, while the winter's frosts are acting with more effect on the soil bared of its covering, and is ameliorating and improving it. Your next step, and that on which your success more depends than on any other, will be to throw your fields into beds so as to *dry* and to *warm* them. This can be well done by the mould-board plough, by breaking up your two first furrows deep and close upon the list, and by opening a deep furrow with a shovel plough in the centre of the old bed, now to be the new alley. This will generally give you all the height of bed wanted, with a little use of the hoe in drawing up the lowest and wettest places. If your lands are very rolling, they may be dry enough without a bed, but there is no one plantation that lays so as to render them unnecessary in every field. Warmth of soil comes from drying, and drying comes from bedding. The listing should be done in the winter as early as your cotton is gathered, so that the prairie, naturally too loose, should have time to consolidate and become compact. The bedding you will scarcely ever have time to do before spring. I anticipate that some who have never tried listing and bedding, may think that it will make the land more liable to wash off. The prairies are very light and loose, and will wash under any and every circumstance I admit. The lands are equally liable to wash when ploughed, and they are to be ploughed equally whether you bed or not. If you intend to stop the wash in a small gulley in any place, you would either fill it with cotton stalks or bushes, and cover them—and this is what is done by listing, and so as to make each row carry its own water, and surely, therefore, you will not charge as a cause of washing, the very means you would use to prevent it. I have followed this practice for twenty years without thinking it liable to this objection—though my experience on the prairie is too short to speak with the confidence of knowing it.

Your next step will be to plant. As to the planting and covering, there are numerous ways, and each having some reason for its preference in the nature of the soil and the situation of the land. It would be tedious to enumerate them. I should open trenches on the prairies with an indigo drill or a short bull-tongue plough, and scatter the seed in the trench, and cover with a broad, long enough to rest across two beds at a time, with shafts pinned at right angles on this board, with handles to it like a plough. The mule walks in the alley and covers two drills at a time, and covers from 25 to 30 acres a day. The board covers and presses the earth down in the seed at the will of the ploughman. Where the trees and stumps are numerous, a hand or two must follow and cover near them. When very wet at the time of planting, your cotton will come well without covering—that is, the rain will coat the seed over for you.

The principal object intended by the bedding, was to dry the land where the seed is put, so as to secure an early rise of the cotton; and though in dry springs you may often get a good rise without bedding; yet it certainly makes it more secure, and the security is worth the additional trouble. I have seen a heavy shower of rain wash the seed up to a great extent, by washing out the gutter or trench in which it was planted, and I have seen it do the same with the plants. Now you are secure against this in a listed and bedded field, and if the alleys wash, as I admit they do, they wash fully to the same extent where you plough and do not bed.

Your cotton being up, there are various ways of extending it, in which good planters differ, though more I think in practice than in principle. I believe all agree in thinking that it is necessary to break up full and deep all the alleys, so as to give loose earth for the plant to push its roots into, in search of food, and to lessen the labour to the hoes. That practice, then, is best, which best answers these ends. With these two objects in view, suppose you try a mould-board plough, and put the left hand or bar side to the plant as near as the list will let you, and throw the earth off, and with its return throw it back, and split out the alley with one cut of a shovel. The alleys will be completely broken, and the space left for the hoe will be so narrow that the hoes will have little to do. The hoes follow the ploughs, and chop through, taking the cotton, the grass, (if any,) and the earth off at one cut, leaving one, two, three, or more stalks in a place, and drawing a hoe full of earth into the same space, which earths the cotton, steadies it, and pushes its growth, and preserves the shape of the bed. The more usual practice here is, to chop through in the same way, but not to draw any earth into the space, or in any way, to the cotton. This is a point of difference between our best, as well as our worst planters. The advocates of one system say that no benefit is done to the plant by earthing it, and that without doing so, they get over more land in a day to the labourer, and can see better whether it has been faithfully done, as nothing is covered. The advocates of the other system assert, that the plant is materially benefited in its growth by having dirt drawn to it—that it is safer from death and from washing up; and though it takes longer, it is not at a time when there is any great press of work. As an advocate, I am incompetent to decide. I shall always put earth to the plant the first time, or while very young, and afterwards, when the press of work comes on, I shall only scrape off, and depend on the plough for the earthing. You see, I think, a good planter may sometimes get himself into a "scrape" without doing wrong.

After the first deep ploughing, the lime in the land becomes slaked by the penetration of the air into it, and also by the rains, and it is kept in so light, loose, and friable condition, as to need no farther ploughings, except to destroy the weeds and grass that may spring up. Any plough that effects this object does your business, and the *broad sweep* that cuts 20 to 24 inches at a furrow, is, perhaps, the best plough, as three times in a row will clean out the widest. It is a most faithful plough; it cuts every thing, and nothing escapes, and in dry time in light lands is superior to any plough that I have seen—as it leaves on the surface all that it cuts; it may take root again in rainy spells, and when such set in, it is advisable to change them for mould-board ploughs, which will cover over all that they cut, and more.* This plough is a narrow root, or bull-tongue plough, with two wings 20 to 24 inches long and three and a half wide, standing in such position to it as to resemble the letter A, with the front edge sharp, and the back edge raised $1\frac{1}{2}$ inches high. You can see a plate of a similar in one of the early numbers of the *American Farmer*, furnished by Col. John Taylor of Caroline. You must cut off the heel and the snout, and substitute the bull-tongue to suit it to our rooty and stumpy lands.

All the workings of the crop after the first hoeing both for the plough and hoe is merely to kill grass and weeds.

Your working the crop closes when the cotton limbs generally touch each other across the rows, because at that time the working would break the limbs, and there are innumerable roots extending across and filling up the alleys which would injure by being then cut. If you have done faithfully all that is above directed, you have done your duty; the rest you must leave to Him who gives the increase.

I have thus, Mr. Editor, tried to point out to the new settler, and the inexperienced, how he should choose a plantation, and how, having chosen one on the prairie, he should make his winter preparations, so as to continue its fertility, and how to prepare to plant and to tend his crop; on each head I have tried to give him some of the leading reasons why he should do so. I consider it essential to a good planter that he should have a reason for every thing he is doing, so that, knowing the object he has in view, he will use the means that are best calculated to effect it. Planters differ less in what they intend, than in the use of the instruments with which they effect their intentions. This letter has been spun out to an unreasonable length, and yet I could not be shorter, and say what I had to say.

A PLANTER.

Alabama, August, 1835.

* The mould-board ploughs that suit this purpose best are such as throw their furrow-slice the farthest, as our object is not how fine you can make the land, but how much grass you can cover. The mould-board should be wide, and so bent, as to be more at right angles with the cutting edge, than the usual cast-iron ploughs. They are shaped so as just to turn what they cut with most ease; we want a shape that will throw it far. We finish a row at three cuts that will require five with the ordinary cast-iron plough. The merits of a plough, by the standard of the dynamometer, is in the inverse of its merits for our use.

On Silk.

[FROM THE PHILADELPHIA COMMERCIAL HERALD.]

IN every part of our country, attention is awakened to this important and profitable branch of manufacture. New-England, however, having taken the lead, seems likely to enjoy for the present nearly a monopoly of the production. A company with a capital of \$200,000 has been formed at Boston, called the Massachusetts Silk Company, which has for its object the culture and manufacture of this article. This company has purchased several tracts of land at Northampton, on which are one or more water privileges, and their factory will probably be erected in that town. Northampton also contains a silk cocoonery, lately the property of Mr. Samuel Whitmarsh, capable of feeding four or five millions of worms, though the number at present does not exceed 800,000. The building is two hundred feet long and two stories in height. It is filled with ranges of sliding drawers of twine lattice work, on which the worms feed, and these are intersected by alleys, so that there is abundance of both air and light.

The New-England Silk Company has likewise been formed at Boston with a capital of \$100,000. Their manufactory is under the superintendence of Mr. Cobb, of Dedham, whose works the company have purchased. It is wholly dependent at present on foreign culture for its supply of material, and is compelled to resort to the manufacture of articles in which silk is only a component part.

The Connecticut Silk Factory at Hartford, has a capital of \$100,000. Their building is furnished with a hundred looms, and preparatory machinery to be moved by a steam engine of eight or ten horse power. The want of stock compels this factory also to the production of articles in which the proportion of silk to the other materials is small. There is also a factory in progress at Poughkeepsie, New-York. At Concord, New-Hampshire, a farm has been purchased for the cultivation of the mulberry.

The establishment of the Valentine Company at Providence, Rhode Island, now sold to a company from New-York and Boston, includes a plantation, containing 30,000 trees, from four to five years old, and from six to eight feet in height. It is supposed, that for the next five years this plantation will yield an average product of half a pound of silk to a tree. This company has also manufactured a considerable quantity of silk goods, and fitted up a building 30 feet by 90, three stories high, to be exclusively devoted to this branch of manufacture. The machinery is carried by steam. A trial of the power loom in this factory has proved that it will answer as well for silk as for cotton, and that, with experience in its management, it will probably turn out as many yards of the former as of the latter. A silk society has been formed at New-Haven.

To encourage the production of this article, a bounty has been offered by the State of Massachusetts on reeled silk, and by Connecticut both on this and on the trees themselves. The natural advantages, however, for the production, must of necessity, be greater in the Middle and Southern States.

The wild mulberry exists in abundance in Virginia and Mississippi, and in the forests of the latter state, silkworms are found growing

spontaneously. The native tree, however, is not found to produce silk of merchantable quality. It is thought that by engrafting scions of the white or Italian mulberry into these wild stocks, a tree will be produced of hardier growth, and less liable to injury from atmospheric changes.

We are indebted for the above information to the *Silk Culturist*, a monthly publication, commenced in Hartford in April last, the pages of which are principally devoted to this interesting topic. To those engaged in the cultivation of the mulberry, the instructions contained in this periodical must be highly valuable,—from the novelty of this branch of agriculture among us, information in regard to its details is peculiarly needed.

Transplanting Fruit Trees.

[FROM THE GENESEE FARMER.]

THIS is commonly considered as one of the most difficult operations in the culture of fruit trees; but if properly performed is very rarely attended with any difficulty or risk. It is a very common opinion that a transplanted tree must of necessity continue nearly stationary in its growth for a year or two after the operation, or at best make but comparatively little progress. A tree, however, *properly* transplanted, will experience very little check in its growth, and often apparently none. Hence, the very great importance of the operation being well understood. Much has been written in explanation of the theory of successful transplanting; but we merely intend here to give a brief description of the practice which experience has proved to be uniformly attended with success, and the most obvious principles on which it is founded.

There are two great points to be observed in removing trees from the soil; first, to preserve the spongioles uninjured; and secondly, to prevent evaporation, by which the tree becomes dry, and if carried to excess, beyond recovery.

1. *Preservation of the Spongioles.*—These are the minute spongy extremities of the finest fibrous or branching thread-like roots, through which, as mouths, the tree receives fluids and other nourishment from the soil, and not through the surface and sides of the roots as is sometimes supposed. As these spongioles are exceedingly delicate in their organization, a very slight degree of violence injures or destroys them. The more carefully therefore trees are removed from the soil, and the more entire the fibrous roots, the greater will be the number of uninjured spongioles remaining, and better will the tree be supplied with nourishment after it is planted again in the soil. And hence the absurdity of the practice, which has been recommended by some writers, of cutting off most of the small fibrous roots, because they cannot be easily replaced in their natural position in the soil.

2. *In order to prevent evaporation*, the roots should never be suffered to become dry, but as soon as removed from the ground, they should be enveloped in some damp substance; wetted straw serves well for a temporary protection. But when intended to be conveyed to a distance, and there is a probability of their being several days out of the ground, damp moss should be employed in packing about the roots, as straw is liable to ferment if kept long in a wet state.

Previously to packing them in the moss, it is an excellent practice to immerse the roots in soft mud or a mixture of the soil and water, so as to coat their surfaces, after which dust or dry sand is to be sprinkled copiously over them to complete the coating.

The holes for receiving the trees should be dug large—not less than five or six feet in diameter at the very least, and eighteen inches deep. The hard and steril subsoil should be thrown out, and its place supplied with rich mould or muck. Where the holes are dug in ground in grass, the turf which is removed from the surface may be inverted in the bottoms. If manure is placed in them, it should be well rotted, and should never be allowed to come in contact with the roots, but should be placed in the bottom, at the surface, and in the more remote parts. The tree should in general be set a little deeper than it originally stood, but not more than two inches; the roots should be spread out horizontally in all directions, so as firmly to brace the trees when they become large; moderately moist and finely pulverized earth should then be gently shaken in about them, so as not to disturb the position of the fibres, until the hole is filled. Care should be taken that all the interstices among the roots be perfectly filled, so as not to leave the smallest cavities; and throwing in the earth in large quantities should for this reason be especially avoided. In order that the soil may be gently packed on every side of all the roots, it is very useful when the soil is inclining to dryness, to pour in a quantity of water as soon as the roots are covered, and then the remainder of the earth shovelled in, which latter prevents the surface from becoming hard by baking. After the operation is finished, a stake should be set in the ground leaning towards the tree, to which it should be tied with a band of matting or of straw, to brace it firmly in an upright position.

Placing the tree leaning a little towards the south or southwest, or with the most projecting branches in that direction, will prevent the trunk being injured by the action of the rays of the sun in hot summer afternoons, an evil which is sometimes so serious as to cause the death of the tree.

Autumn is ordinarily the best time for removing trees—more time is then afforded than in the hurrying season of spring—besides which the earth becomes more settled about the roots, and new spongioles are produced in place of those which may have been destroyed, especially if the operation is not performed too late in autumn. Better trees also may be obtained in autumn than in spring after nurseries have been culled. But if tender kinds be transplanted in the fall, and particularly if they be removed to a colder section of the country, they will, from their mutilated state, be more liable to injury from frost. To those, therefore, who live remote, and are unable to obtain such trees for early planting in the spring, or those who live in the colder regions of the country, we would recommend to procure their trees in autumn, and bury the roots and a part of the stem and branches in a trench dug for the purpose, the roots being packed closely together, and the branches resting in an inclined position upon the earth; which operation is technically termed by nurserymen, *laying in by the heel*. In this way they may be effectually protected from injury from the frosts of winter.

Nothing is more common than to lose trees by transplanting; but there is no necessity for such failure; if trees are transplanted with proper care, there will be an almost absolute certainty of their living.

If when they are taken from the earth, care is taken to remove the roots entire—to keep them fresh—and in replacing them in the soil, to pack finely pulverized earth well about the roots, preserving them in their natural position, there can be little danger of success.

But it is not only necessary the trees should *live*, but that they should thrive also; and for this object, it is indispensably requisite that they should have a large deep bed of loose soil for the roots to penetrate. If the ground is of a hard or heavy nature, the holes must be made large and deep and filled with the proper materials, for if the roots are confined in small holes dug in such ground, they will succeed little better than if planted in a small box of earth.

Rye, Potatoes and Oats, as cultivated in the Valley of Connecticut.

Extract from a letter of Rev. H. Coleman, to the Editor of the New-York Farmer.

Rye.—Rye is not very extensively grown, excepting occasionally as a first crop on newly cleared land, where the yield is from fifteen to twenty-five bushels to an acre. It was formerly very much cultivated, especially when the business of rum distillation was largely carried on, and farmers at the distillery could obtain a high and cash price for their product. But since these fires of destruction have been generally extinguished in these parts of the country, the demand for it has greatly lessened. It is applied by many persons with great success to the feeding of swine and cattle. Some farmers in my neighbourhood, to whom I recommended the last year to make as accurate observation as they could of its effects, when applied in a mixed form to the feeding of neat cattle, speak of it in the most favourable terms. The Shakers in Canterbury, N. H., speak very highly of it to mix with Indian meal, half and half, for their swine, and say they should prefer to give a quarter of a dollar more per bushel for rye to use in this way than to use clear Indian meal. They are, in general, in all these matters exact observers, and may be regarded in all matters of agricultural and domestic economy, as the highest authority. An intelligent farmer, in Maidshire, holds it in the same estimation for feeding swine; and Gov. Lincoln, of Worcester, Mass. as good a farmer as he has proved himself to be wise and patriotic and just as a magistrate, has informed me of his use of it for fattening swine with great success.

The dairy farmers in Cheshire, Mass. who in the excellence and amount of their products, are perhaps surpassed by none in the country, are accustomed to give rye meal to their cows in the spring, as they believe, to great advantage. They have their cows come in, if possible, in March, and begin to make cheese by the first of April. From this time, until the pastures afford a full bite of grass, they give to each of their cows about four quarts of rye meal once a day. Indian meal, they believe, has a tendency, when given in considerable quantities, to dry the cow, but rye meal greatly promotes the secretion of milk. Their experience is of great value, for nothing can exceed the neat and admirable management of some of the cheese dairies, which I have visited in this place. The practice of the Flemish farmers is, likewise, to give their milch cows daily a "white drink," which is rye meal mixed with water.

Many of the fields of rye, which I passed in the upper part of the valley, were black with ergot or spurred rye. The true cause of this disease in rye is not well ascertained. Some have ascribed it to a wet spring followed by a very hot summer, but that has not been the case this year. It would seem in some measure ascribable to too sudden and luxuriant a growth, when the sap is forced too violently, and bursts the vessels of the grain. The substance itself, the diseased grain, is very deleterious and poisonous, and it ought to be known is as pernicious to brute animals as to human.

Potatoes are esteemed a valuable crop. The average yield being from 250 to 400 bushels; and many farmers spoke of having obtained 500 bushels to the acre. They are not, however, raised so extensively as might be expected, and are principally used for the fattening of swine and stall feeding of beef. In the former case they are always cooked, in the latter they are given in a raw state; a yoke of oxen consuming two, three, four, and sometimes even five bushels a day. The profit of applying them in this way is doubtful, as may be easily seen upon reflection. Cattle fed in this way will not require a great amount of hay; but the calculation in such cases is not very easy, so much depends on the condition of the cattle and their value when put up, their thrift, and the state of the markets, when they are ready to be disposed of. Beef made from potatoes has a peculiar sweetness and "juiciness," but is thought that the animals fall away more in driving to market than those which are fattened upon Indian meal. This, after all, may be merely conjecture. The nominal value of potatoes is from 13 to 20 cents per bushel; but they can hardly be considered a remunerating crop, where the yield does not exceed 200 bushels. They are fine preparation for a crop of corn; and though there are different opinions on this subject, I believe they precede wheat to advantage. The most abundant crops in solid measurement are the long reds or River of Plate potatoes; and from the shape of these, and their tender and crisp nature, cattle are not likely to be choked with them; but there are other kinds of a more farinaceous nature, which, it is thought, will yield an equal amount in weight to the acre. As feed for sheep, either for fattening sheep or ewe sheep in the spring, they are highly valuable. Of their relative value compared with ruta бага, mangel wurtzel, carrots, parsnips, and beets, I shall reserve an opinion until some future occasion.

Few articles of human food are capable of yielding a greater quantity, and, when well prepared, few furnish a more agreeable, useful, and universal aliment. The discovery of the Rohon potato promises most extraordinary results. It is announced in the last Quarterly Journal of Agriculture, in a letter from Prince Charles de Rohan, of Switzerland, dated 25th of April, 1834. It is a new variety, and raised from the seed. "To give you some idea," he says, "of the extraordinary produce of this potato, I give three examples at random. M. E. Martial, at Alais, gathered last autumn tubers weighing 13lbs. 7oz., 11lbs. 9oz., and 9lbs. 13oz. M. de Montel, a proprietor near me, asked me for tubers, when I could not give him more than a single small tuber having four eyes. He weighed it for curiosity, and found that it wanted a few grains to make half an ounce. However, this small tuber being planted, produced 48½lbs. The attorney of the Abbey of Auterive, canton of Fribourg, to whom I had given two tubers two years ago, and who, delighted with his first harvest,

after having eaten and given them to his friends, planted the rest, and obtained last autumn six double horse loads and eight scuttletulls.

This story, though most extraordinary, is quoted by the Edinburgh Journal from "*Le Cultivateur, Journal des Progress Agricoles*," January, 1835.

Oats.—Oats are very extensively cultivated in the upper parts of the valley and on the hills. In general they succeed corn, though a different rotation is often practised. The green sward is ploughed up, and oats sowed at the rate of three bushels to the acre, without manure. The land is then manured, and planted with corn; and this is followed by wheat, when the land is "stocked down," as it is termed, with herd's grass and clover. Many farmers use, likewise a large proportion of red top, which makes an excellent hay. Others begin the rotation with wheat, and obtain two crops of Indian corn from one manuring. The average crops of oats, under favourable cultivation, may be rated at from 35 to 49 bushels, though I received authentic accounts of crops amounting to 80 and 90 bushels. The promise of the crop was never better than this year, but it was at the very commencement of the oat harvest when I was there, and no instance of exact measurement occurred to me. But two kinds of oats were observed by me: the common white oat, and the Siberian or Tartarian oat. One farmer spoke very highly of what he called the Smyrna oat as a heavier oat than the common, and a better yielder, but he could give me no satisfactory account of it. The Siberian or Tartarian oat, as it is denominated by Loudon, is but little cultivated, and seldom found alone. The straw is very large, and the grains are all pendant on one side of the stalk. It has from this circumstance, acquired the designation of the horse-maine oat. It was stated to me, that a distinguished farmer in Walpole, N. H., had cultivated it exclusively several years; that he usually obtained sixty bushels to the acre, and they would weigh 36lbs to the bushel. This I have, however, only from report, a very doubtful authority in such cases. The Shakers, at Canterbury, spoke in praise of it; but Loudon says, "it is little cultivated." It is later in coming to maturity than the other oats, but its appearance when growing is singularly beautiful and promising.

Eighty bushels of oats to an acre is spoken of, as not an extraordinary crop in Scotland; and they speak of ninety and a hundred bushels to the acre, and upwards. The quantity of seed which they sow to the acre, is from four to six bushels. The quantity with us, is, I believe, never over three bushels. It deserves particular inquiry, and exact experiments, whether we sow enough seed; and what quantity might be most profitably employed. On this matter, which is of great importance to the agricultural interest, both in respect to oats and other grains, it were greatly to be wished that experienced farmers would communicate their views, and the results of their own practice and observation to the public.

At Barnet, Vt. a place principally settled by Scotch families, and where the farming is very superior, they have excellent mills for hulling and flouring oats, and a good deal of oat flour of the finest kind is prepared for domestic use, and for the market.

In some places on the river, oats and peas are cultivated together; about two-thirds of oats and one of peas are sown. This is generally after corn, and it makes an excellent provender for stall-fed cattle. Of peas or barley as a single crop, I do not recollect, in a journey of five hundred miles, seeing over one field.

Weevil in Grain.—With a view to protect their grain from the weevil, the Shakers in Canterbury, N. H., are accustomed to sprinkle their grainaries, both floor and sides, with fine newly slacked lime; and this had proved with them an effectual preventative.

HENRY COLMAN.

A Large Yield of Corn.

[FROM THE FARMER'S REGISTER.]

White Plains, Norfolk County, October, 21, 1835.

I now send you, according to promise in my last, (dated the 6th of July,) the result of the experiment crop—not that the crop is of an extraordinary character, so as to deserve public record; but as the promise had been given, silence would have countenanced the impression, that it had resulted in a total failure—which was not the case. The quantity housed and measured was 115 bushels and five quarts per acre. There was a loss of many bushels by the uninterrupted depredations of my poultry, as it was planted not far from my poultry yard, and a heavy wind in July had prostrated the whole crop, so as to make it entirely convenient to their ravages—besides, the quantity that was lost by rotting and ruining on the ground, and the blight the corn received in so young a stage, by having the roots broken at the time it most needed them for maturity. Could I have been on the farm during the fall, the crop might have been saved from these domestic pilferers; but my health prevented. I only returned in time to witness its blight. The manure used was stable and ashes.

A. S. FOREMAN.

P. S. The corn planted was the Twin corn, obtained from James M. Garnett, Esq. of Essex.

The Farmer's Proverbs.

[FROM THE FARMER'S REGISTER.]

The following "*Proverbs*" from "A PLAIN OLD FARMER," are excellent. They should be "read, marked, learned and inwardly digested.—*Editor*."

A lean wood-pile makes a fat grave-yard.

If you feed low, you must work slow.

Clean out your spring often, if you would see the doctor seldom.

Small cabins make large grave-yards—much filth, much physic.

Feed well, and you will breed well.

Smooth gear makes smooth ploughing—when the collar chafes the skin, the plough won't go in. The horse sweats least when the gear fits best.

An empty belly makes a sore back. The saddle is damned when the fault is in the feed. Good feeding makes the best padding.

Fleas in the cabin will make grass in the corn field—for he that catches fleas by night will catch sleep by day. Where the labourer is asleep there the grass is awake. Dull licks make brisk weeds.

A mean overseer is a plantation cancer: immediate excision is the best cure.

There are some who have an empty meat house yet a full pot—an empty crib, yet a full oven. They spin not, yet they are clothed—

They toil not, yet they are fed. Their horses graze, yet they have no pasture—and their cows calve without a bull. Their mares foal without a stallion. This is a sore evil under the sun.

A new hoop saves an old tub, but new cider will burst an old barrel.

Build no new nest out of old straw, for instead of brooding eggs you will be breeding lice.

Never over-cock your poultry yard, for where there is much fighting there is but little gain.

A nest without the house is better than a nest within—for lice within are worse than rain without.

Take care of poor spots and the rich spots will take care of themselves. "He that giveth to the rich robbeth the poor, but he that giveth to the poor shall be repaid."

He that tilleth very poor land sendeth good corn after worthless *nubbings*. Poor land receives good currency, but pays bad money. It borrows hard money and pays back bad paper.

With your work always keep ahead, and the grass won't grow behind you. If the work is behind-hand, the grass will be before-hand.

He that works his crop badly will be over-cropped sadly—for to slight work is to increase work.

When overseers become gentlemen, the master must become overseer, or the slave becomes a freeman.

Overseers are often guilty of *oversights*.

He that works of nights sleeps of days—night workers are bad croppers.

If you lose oversight of your overseer, he will lose sight of your business—strict employers make attentive overseers. An overseer neglected is one soon ejected. If the master is much at home, the overseer is but seldom abroad—if one is a man of pleasure, the other will be a man of leisure.

When your overseer puts a black man in his place, he gives a lesson to his employer. If "uncle Tom" is to manage, let uncle Tom have the honour, and his master save the wages.

If you will cure the gall, you will not have the gully—a gall for want of mending is a gully in the ending.

Rural Life.

[FROM THE GENESEE FARMER.]

WE have been described, and with some justice by foreigners, as a calculating, money-making people; as a nation of unitarians—looking always to the main chance, and caring little for those things which contribute to the adornment and refinement of existence. We have a magnificent country, but as yet art has done but little to improve it: and except in the immediate neighbourhood of our large cities, a handsome, well kept country residence is rarely seen. Refinement and elegance have not yet followed wealth into the interior. There are in our own State very many rich and highly cultivated farms, situate in regions picturesque and beautiful. But the hand of industry has been employed for the most part to deface, not to improve the charms of nature. The fields wave with luxuriant crops—the pastures are studded with fine cattle—every thing wears an appearance of abundance and prosperity. But there is a want of taste—all is done for profit, nothing for beauty. The house of the wealthy farmer is usually a

plain structure, without an attempt at ornament: on one side is an apple orchard, on the other, the barn, and in front, a small kitchen garden, stocked with the commonest vegetables. A little *taste* to appreciate the more refined enjoyments of life, a little knowledge of horticulture, and a little expense and attention, would have made his mansion agreeable to the eye as well as convenient for use—would have surrounded it with a verdant lawn and spreading trees, and would have filled his orchards and gardens with abundance and variety of fruits, vegetables and flowers. This is, perhaps, reserved for another generation. We are a young country, and but a few years has passed since the forest shaded the fields where now the harvest ripens. The rough work must be done first, and the foundation laid before the superstructure can be effected.

Wealth, however, is rapidly accumulating, and we are glad to perceive a growing fondness for the pursuits of the country. No taste is purer—none more elevating than that which urges us to the constant contemplation of the wonders and beauties of nature. If our wealthy citizens, instead of flying to crowded watering places, there to repeat the same insipid social game which fatigued them in the winter, would occupy their leisure, interest their minds, and spend their money, in the cultivation and improvement of country seats, they would contribute much to the adornment of our State, to the refinement of our agricultural population, and perchance discover that a few months passed amid the tranquil beauties of the country, and in its healthful and interesting occupations would contribute more to rational enjoyment and intellectual elevation, than the excitements of city dissipation, the degrading turmoil of politics, or the harassing cares of business.

“O friendly to the best pursuits of man,
Friendly to thought, to virtue and to peace,
Domestic life in rural leisure passed!
Few know thy value, and few taste thy sweets;
Tho’ many boast thy favours, and affect
To understand and choose thee for their own.
But foolish man forgets his proper bliss
E’en as his first progenitor, and quits,
Though placed in paradise, (for earth has still
Some traces of her youthful beauty left.)
Substantial happiness for transient joy.”

FLOWERS.

With each expanding flower we find
Some pleasing sentiment combined:
Love in the Myrtle bloom is seen,
Remembrance to the Violet clings,
Peace brightens in the Olive’s green,
Hope from the half closed Iris springs,
And victory to the Laurel glows,
And woman blushes in the Rose.

Skinless Oats—Increase twenty-eight fold.

[FROM THE CULTIVATOR.]

J. BUEL, Esq.—*Sir*.—In communicating the produce and cultivation of skinless oats raised by E. Holbrook, Esq., I beg you will not think me arrogant, or having any pretension to great agricultural skill, our motive simply is, that we hope some experienced agriculturist will (through that truly valuable agricultural publication, the *Cultivator*), communicate the result of his experience in the cultivation of the skinless oats. Mr. Holbrook procured four quarts of skinless oats, which I sowed broadcast. The crop was gathered and taken to the barn, threshed, cleaned and measured; the product is three bushels and a half—the bushel weighing forty-four pounds. In consequence of a miscarriage when the oats were forwarded, they were not received until the 19th of May, when they were immediately sowed. The land appointed and prepared to receive them, was joining a timothy field; the consequence was, when the timothy was mown down, an innumerable host of grasshoppers took possession of the oats and commenced their usual destructive havoc, which prevented a much greater yield.

Preparation of the soil.—A piece of land from which a large crop of ruta бага was taken last November. As soon as the turnips were taken from the field, we ran the plough up and down the furrows, (the turnips being cultivated upon the four furrow system.) The land remained in this state during winter, receiving all the benefits of the frost without exposing the soil to heavy rains, &c. In March, the ridges with a plough, were struck down and harrowed: when ready for sowing, they were formed into eight step lands, ploughed deep and sowed. I must remark, in consequence of the protracted sowing, I formed a composition of sheep manure, ashes, plaster, &c. &c. with which we gave a top dressing to expedite their growth, selecting a proper period according to our judgment, for the application, although we received scarcely any rain from the time of sowing to the time of harvesting, they continued to grow luxuriantly. It may be well to remark, this mode of cultivation is not applicable to all soils, particularly sandy land.

Yours, with great respect,

THOMAS MITFORD.

*Hyde Park, Oct. 15th, 1835.**Preserving Roots.*

[FROM THE CULTIVATOR]

WE find in Chaptal's "*Chemistry applied to Agriculture*," an excellent chapter on the preservation of animal and vegetable substances. We extract the following from the preliminary remarks.

"The nature of all bodies which have ceased to live or vegetate, are changed, as soon as the physical or chemical laws by which they are governed cease to act; the elements of which they were composed then form new combinations, and consequently new substances.

"While an animal lives, or a plant vegetates, the laws of chemical affinity are continually modified in its organs by the laws of vitality;

but when the animal or plant ceases to live, it becomes entirely subject to the laws of chemical affinity, by which alone its decomposition is effected.

"The principles of the atmospheric air which is imbibed by the organs of living bodies, whether animal or vegetable, are decomposed and assimilated by them, while dead bodies are decomposed by its action. Heat is the most powerful stimulant of the vital functions, yet it becomes, after death, one of the most active agents in the work of destruction. Our efforts, then, for the preservation of bodies, ought to be directed to counteracting or governing those chemical or physical agents, from the action of which they suffer; and we shall see that all the methods which have been successful, are those which have been formed upon this principle.

"The chemical agents, which exert the most powerful influence over the products of the earth, are air, water and heat; the action of these, however, is not equally powerful over all classes of plants; the soft and watery, and those which approach the nearest to animal matter, decompose most readily; the principles of such are less coherent, less strongly united than those of others; so that the action of disorganizing agents upon them is prompt and effectual.

"All the methods now employed for the preservation of bodies, consist in so far changing their nature, as to deprive them of the elements of destruction contained within their own organs; or in secluding the substances to be preserved from contact with the destructive agents mentioned in the preceding paragraph; or in causing them to imbibe certain other substances, the anti-putrescent qualities of which counteract all action, whether of internal or external agents.

"In all vegetable products, water exists in two different states, one part of it being found free, and the other in a state of true combination: the first portion, not being confined except by the covering of the vegetable, evaporates at the temperature of the atmosphere; the second is set free only at a temperature sufficiently high to decompose the substances containing it: the first, though foreign to the composition of the vegetable, enters into every part of it, dissolving some of its principles, serving as a vehicle for air and heat, and being converted by cold into ice; by these several properties it greatly facilitates decomposition: the second portion, from which no evil of the kind arises, is found combined and solidified in the plants, and its action is thus neutralized."

Drying fruit, then, in order to preserve them, consists in depriving them of the water contained in them in a free state. This may be done by subjecting them to heat not exceeding 95 to 113°—either by exposing them to the sun, or in a stove room, or in ovens, which latter practice is resorted to, even in the warmest countries, at the commencement of the drying process. *In preserving the apple*, for instance, our author adds, that by depriving their surface of all moisture before putting them up; keeping them in dry places, where the temperature will be constantly between 50 and 54°, and by separating the fruits that they shall not come in contact, they may sometimes be preserved 18 months. The farmer in Scoharie, who has been in the habit of bringing the Spitzenberg to our market on the 4th of July, owes his success to the observance of these rules.

On the preservation of the fruits of the earth by secluding them from the action of air, water and heat, M. Chaptal enumerates the following causes of decay;

"The atmospheric air, coming in contact with fruits, deprives them of their carbon, and forms carbonic acid.

"Fruits exposed to the solvent action of water suffer decomposition, by having the affinity existing between their constituent principles weakened, and at length destroyed.

"Heat dilates the particles of bodies, and thus diminishes the force of cohesion and attraction, and favours the admission of air and water.

"The combined action of these three agents produces very speedy decomposition; the effect produced by any one of them is slower, and the results different. So that in order to preserve fruits from decomposition, it is necessary to guard them from the power of these three destroyers."

Practically applied, these axioms teach, that to preserve roots in good condition, the following precautions should be observed :

1. That their surface be entirely freed from moisture before they are housed or buried, and that they be deposited in a dry situation, where water will not have access to them.

2. That they be excluded from the air, by burying them in dry earth, or slightly covering them in the cellar with earth. And,

3. That they be kept in a cool temperature—the heat ranging from 34 to 45 degrees.

We frequently hear house keepers complain, that their potatoes, turnips, and other vegetables, soon deteriorate, and lose their fine flavour, after they have been a short time in their cellars. This is a natural consequence of the injudicious way in which they are too frequently kept—exposed to the atmosphere, and to a high temperature, in a cellar adjoining the kitchen, or perhaps in the kitchen itself. Again, potatoes or turnips buried in a wet condition, or the latter with parts of their tops left on, are very liable to ferment and spoil. We find it to be a necessary precaution in burying turnips, to make one or more holes in the crown of the pit, to let off the rarified air, and abate the heat which is almost invariably generated on their being buried.

In preventing the total loss of potatoes that have been affected by frost, Thomas Dallas directs, that when they are slightly touched by the frost, it is only necessary to sprinkle the roots with lime to absorb the water under the skin; that when the outer portion of their substance is frozen, the tubers may be paired and thrown for some hours into water slightly salted; and that when they are wholly frozen, they will yield, upon distillation, a spirituous liquor resembling the best rum, and in greater quantities than roots which have not been frozen.

The quotations we have made above are invaluable to the farmer and house keeper; and if the principles which they establish are understood and practised upon, we shall have no cause to regret the length to which we have extended this article.

Principles of Breeding.—Management of Mares and their Foals.

[FROM THE LIBRARY OF USEFUL KNOWLEDGE.]

THIS may be a proper period to recur to the important subject of breeding, particularly important when there cannot be a doubt, that

our breed of useful horses has, within the last twenty years, most materially degenerated. Our running horses are not much lessened in excellence and value; but our hunters and hackneys are not what they used to be. We shall endeavour to point out the cause of this.

Our observations must be of a general nature, and will be very simple; and the first axiom we should lay down is, that "like will produce like," that the progeny will inherit the qualities, or the mingled qualities, of the parents. We would refer to the subject of diseases, and again state our perfect conviction, that there is scarcely one by which either of the parents is affected, that the foal will not inherit, or, at least, the predisposition to it; even the consequences of ill usage or hard work will descend to the progeny. We have already enlarged on this, but its importance will be a sufficient apology for the repetition. We have had proof upon proof, that blindness, roaring, thick wind, broken wind, spavins, curbs, ring bones, and founder, have been bequeathed, both by the sire and the dam, to the offspring. It should likewise be recollected, that although these blemishes may not appear in the immediate progeny, they frequently will in the next generation. Hence, the necessity of some knowledge of the parentage both of the sire and dam.

Peculiarity of form and constitution will also be inherited. This is a most important, but neglected consideration; for however desirable, or even perfect, may have been the confirmation of the sire, every good point may be neutralized or lost by the defective form, or want of blood, of the mare. There are niceties in this, of which some breeders used to be aware, and they employed their knowledge to great advantage. When they were careful that the essential points should be good in both parents, and that some minor defect in either should be met, and got rid of, by excellence in that particular point in the other, the result was creditable to their judgment, and highly profitable. The unskilful or careless breeder will often so badly pair the animals, that the good points of each will be, in a manner lost; the defects of both will be increased, and the produce will be far inferior to both sire and dam.

Of late years these principles have been much lost sight of in the breeding of horses for general use; and the following is the explanation of it. There are nearly as good stallions as there used to be. Few but well formed and valuable horses will be selected and retained as stallions. They are always the very prime of the breed; but the mares are not what they used to be. Poverty has induced many of the breeders to part with the mares from which they used to raise their stock, and which were worth their weight in gold; and the jade on which the farmer now rides to market, or which he uses in his farm, cost him but little money, and is only retained because he could not get much money for her. It has likewise become the fashion for gentlemen to ride mares, almost as frequently as geldings; and thus the better kind are taken from the breeding service, until old age or injury renders them worth little for it. An intelligent veterinary surgeon, Mr. Castley, has placed this in a very strong light, in the third volume of the "*Veterinarian*," p. 371.

We would wish then to impress it on the minds of breeders, that peculiarity of form and constitution are inherited from both parents; that the excellence of the mare is a point of quite as much importance as that of the horse; and that out of a sorry mare, let the horse be as perfect as he may, a good foal will rarely be produced. All

this is recognized upon the turf, although poverty or carelessness have made the general breeder neglect or forget it.

It is recognized in the midland counties in the breed of cart horses; and the strict attention which has been paid to it, has brought our heavy horses almost to the same perfection in their way as the blood horse. It is strange that in our saddle horses, our hunters, and to a great degree, our carriage horses, this should be left to chance. The breeder begins to care little about the quality of the mare, and the progeny is becoming comparatively of little worth. Experience, it is said, will make fools wise, but experience will here be bought at a very dear rate, both as it regards the breeder and the community.

That the constitution and endurance of the horse are inherited, no sporting man ever doubted. The qualities of the sire or the dam descended from generation to generation, and the excellencies or defects of certain horses are traced, and justly so, to some peculiarity in a far distant ancestor.

It may, perhaps be justly affirmed, that there is more difficulty in selecting a good mare to breed from, than a good horse, because she should possess somewhat opposite qualities. Her carcass should be long, to give room for the growth of the fœtus, and yet with this there should be compactness of form and shortness of leg. What can they expect who go to Smithfield market to purchase a number of worn-out, spavined, foundered mares, about whom they fancy there have been some good points, and send them far into the country to breed from, and with all their variety of shape, to be covered by the same horse? In a lottery like this, there may be now and then a prize, but there must be many blanks. "If horse-breeders, possessed of good judgment, would pay the same attention to breed and shape as Mr. Bakewell did with sheep, they would probably attain their wishes in an equal degree, and greatly to their advantage, whether for the collar or the road, for racing or for hunting." [*Parkinson on the breeding and management of Live Stock*, Vol. ii: p. 59.]

As to the shape of the stallion, little satisfactory can be said. It must depend on that of the mare, and the kind of horse wished to be bred; but if there be one point which we should say is absolutely essential, it is this "compactness"—as much goodness and strength as possible condensed in a little space. If we are describing the reverse of the common race of stallions for hunter and coach-horses, the fault lies with the bad taste and judgment of the majority of breeders.

Next to compactness, the inclination of the shoulder will be regarded. A huge stallion, with upright shoulders, never got a capital hunter or hackney. From him the breeder can obtain nothing but a cart or dray horse, and that, perhaps, spoiled by the opposite form of the mare. On the other hand, an upright shoulder is desirable, if not absolutely necessary, when a mere draught horse is required.

It is of no little importance, that the parents should be in full possession of their natural strength and powers. It is a common error, that because a mare has once been good, she is fit for breeding when she is no longer capable of ordinary work. Her blood and perfect frame may ensure a foal of some value, but he will inherit a portion of the worn-out constitution of her from whom he sprung.

On the subject of *breeding in and in*, that is, persevering in the same breed, and selecting the best on either side much has been said. The system of crossing requires much judgment and experience; a

great deal more, indeed, than breeders usually possess. The bad qualities of the cross are too soon engrafted on the original stock, and once engrafted, they are not, for many generations, eradicated. The good ones of both are occasionally neutralized to a most mortifying degree. On the other hand, it is the fact, however some may deny it, that strict confinement to one breed, however valuable or perfect, produces gradual deterioration. The truth here, as in many other cases, lies in the middle; crossing should be attempted with great caution, and the most perfect of the same breed should be selected, but varied, by being frequently taken from different stocks. This is the secret of the course. The pure south-eastern blood is never left, but the stock is often changed with manifest advantage.

A mare is capable of breeding at three or four years old; some have injudiciously commenced at two years, before her form or her strength is sufficiently developed, and with the developement of which this early breeding will materially interfere. If she does little more than farm-work, she may continue to be bred from until she is nearly twenty; but if she has been hardly worked, and bears the marks of it, let her have been what she will in her youth, she will deceive the expectations of the breeder in her old age.

The mare comes into heat in the early part of the spring. She is said to go with foal eleven months, but there is sometimes a strange irregularity about this. Some have been known to foal five weeks earlier, while the time of others has been extended six weeks beyond the eleven months. We may, however, take eleven months as the average time. In running horses, that are brought so early to the starting post, and whether they are foaled early in January or late in April, rank as of the same age, it is of importance that the mare should go to cover as early as possible; in two or three years old, four months would make considerable difference in the growth and strength; yet many of these early foals are almost worthless, because they have been deprived of that additional nutriment which nature designed for them. For other breeds, the beginning of May is the most convenient period. The mare would then foal in the early part of April, when there would begin to be sufficient food for her and her colt without confining them to the stable.

From the time of covering to that of foaling, the mare may be kept at moderate work, and that, not only without injury, but with decided advantage. The work may be continued up to the very time when she is expected to foal; and of which she will give at least a day's notice, by the adhesive matter, that will appear about the teats. When this is seen, it will be prudent to release her from work, and keep her near home, and under the frequent inspection of some careful person.

When nearly half the time of pregnancy has elapsed, the mare should have a little better food. She should be allowed one or two feeds of corn in the day. This is about the period when they are accustomed to slink their foals, or when abortion occurs; at this time, therefore, the eye of the owner should be frequently upon them. Good feeding and moderate exercise will be the best preventives against this. The mare that has once slinked her foal is ever liable to the same accident, and, therefore, should never be suffered to be with other mares about the time that this usually occurs, which is between the fourth and fifth month; for such is the power of imagination or of sympathy in the mare, that if one of them suffers abortion, the greater

number of those in the same pasture will share the same fate. Farmers wash, and paint, and tar their stables to prevent some supposed infection; the infection lies in the imagination.

If a mare has been regularly exercised, and apparently in health while she was in foal, little danger will attend the act of parturition. If there be false presentation of the fœtus, or difficulty in producing it, it will be better to have recourse to a well informed practitioner, rather than injure the mother by the violent and injurious attempts which are often made to relieve the animal.

As soon as the mare has foaled, she should be turned into some well sheltered pasture, with a hovel or shed to run into when she pleases; and as supposing she has foaled in April, the grass is scanty, she should have a couple of feeds of corn daily. The breeder may depend upon it, that nothing is gained by starving the mother and stinting the foal at this time. It is the most important time in the life of the horse: and if, from false economy, his growth be arrested now, his puny form, and want of endurance will ever afterwards testify the error that has been committed. The corn should be given in a trough on the ground, that the foal may partake of it with the mother. When the new grass is flush and plenty, the corn may be gradually discontinued.

Our work is intended, principally, for farmers; they well know that the mare may be put to moderate work again a month after the foaling. The foal is first shut in the stable during the hours of work; but as soon as it acquires sufficient strength to toddle after the mare, and especially when she is at slow work, it will be better for the foal and the dam that they should be together. The work will contribute to the health of the mother; the foal will more frequently draw the milk, and thrive better; and will be hardy and tractable, and gradually familiarized with the objects among which it is afterwards to live. While the mother, however, is thus worked, she and the foal should be well fed; and two feeds of corn, at least, should be added to the green food which they get when turned out after their work and at night. The mare will usually be found at heat at or before the expiration of a month from the time of foaling, when, if she be kept principally for breeding purposes, she may be put again to the horse.

In five or six months, according to the growth of the foal, it may be weaned. It should then be housed for three weeks or a month, or turned into some distant rick-yard. There can be no better place for the foal than the latter as affording, and that without trouble, both food and shelter. The mother should be put to harder work and have drier meat. One or two urine balls, or a physic ball, will be useful if the milk should be troublesome, or she should pine after the foal.

There is no principle of greater importance than the liberal feeding of the foal, during the whole of his growth, and at this time in particular. Bruised oats and bran should form a considerable part of his daily provender. The farmer may be assured that money is well laid out which is expended on the liberal nourishment of the growing colt; while, however, he is well fed, he should not be rendered delicate by excess of care. A racing colt is sometimes stabled; but one that is destined to be a hunter, a hackney, or an agricultural horse, should merely have a square rick, under the leeward side of which he may shelter himself, or a hovel, into which he may run at night or out of the rain. The process of breaking in should com-

mence from the very period of weaning. The foal should be daily handled, partially dressed, accustomed to the halter, led about, and even tied up. The tractability and good temper, and value of the horse, depend a great deal more upon this than breeders are aware; this should be done as much as possible by the man by whom they are fed, and whose management of them should be always kind and gentle. There is no fault for which a breeder should so invariably discharge his servant as cruelty, or even harshness, towards the rising stock; for the principle on which their after usefulness is founded, is early attachment to, and confidence in man, and obedience, implicit obedience, resulting principally from these.

The Blind Staggers.

[FROM THE FARMER AND GARDENER]

HAVING seen by a notice in the *Village Herald*, some weeks since that this alarming disease was prevailing in Somerset County, (Md.) and had then, already killed from 60 to 70 horses, and seeing also communications were solicited, we prepared the subjoined paper and sent it thither for publication, preferring, as the disease was rapid and deadly in its progress, that *medium* to our own journal, in the hope that as it would thus appear earlier where the malady existed, it would thereby stand the better chance of doing more substantial benefit. Our object having been attained, we insert it in order that it may be more generally spread abroad, and be available wherever the ailment may present itself.—*Editor F. & G.*

Blind Staggers in Horses.—The *Village Herald* of the 22d inst., says, that a large number of horses had died in Somerset County, of this State, of what is termed *blind staggers*. That the number has already reached 60 or 70, and many were labouring under the disease. The editor having requested to be informed of a remedy, we take the liberty of making the following observations:

This disease is one which often defies the most skilful treatment, and is, indeed, one in which death generally supervenes. The exciting cause of this disease is not easily to be traced. It has been produced sometimes in the heat of summer, when the horse has been too fat, or full of blood, from over heating, causing an influx of blood to the brain. Dr. Harden, of Morgan County, Georgia, though he does not advance the opinion, inclines to the belief, that it results from water getting in the ear of the animal; that he had always noticed the attacks to follow a rainy spell. But though they differ as to the cause, all the authors we have consulted prescribe the *free* use of the lancet, even to faintness, and the most active purgative medicines. The purge which acts most quickly being considered the best, and that is said to be the *Croton nut*, powered at the time, and given in a drink, in the dose of half a drachm, to be followed by smaller doses of ten grains each, every six hours, with plenty of injections of warm soap and water, until the bowels are well opened. If the *Croton nut* is not at hand, *aloes* may be dissolved in hot water, loz. at the first dose, and afterwards $\frac{1}{4}$ of an oz. every four hours until purging is produced, this effect being produced, *fox glove* and *tartar emetic*, in doses of a drachm each, 3 or 4 times a day should be given. In addition to this

treatment, the back of the head should be *blistered*. From the general spread of this disease in Somerset County, and from the season of the year, we should, ourselves, be inclined to believe that it is not referrible to *fat* in the afflicted animals, or to their being over-heated; nor have we much faith in its proceeding from water in the ear. We believe it owing to some vitiated condition of the food or atmosphere, inducing a tendency of blood to the brain; but be the cause what it may, depletion from the veins and bowels is the only treatment in which security can be found. If the horses which have been attacked have been running in pastures, they should be immediately stabled, so as to be protected from the deleterious effects from the pastures or the noxious miasma as much as possible. If the stables were fumigated before the horses were put into them, with muriate of soda, (common salt,) manganese and vitriolic acid, much good will ensue. It would be well also to sprinkle solutions of chloride of lime over the stable floors twice a day for a week or two.

We had prepared the above article when a friend put into our hand Dr. Mason's "*Pocket Farrier*," by which we perceive he ascribes the disease to horses feeding on grass in the spring and fall, late at night and early in the morning, at which time, he says, the fields and pastures are covered with a poisonous web, which is spun and spread upon the grass by a small spider. So rapidly, so industriously, does the little insect work, that in the space of one night not a blade or spire of the grass is left untouched. This web, catching the dew drops on its bosom, causes the fields in the morning to glisten and sparkle as if covered with a thin sheet of ice. A horse, says Dr. Mason, that feeds upon a pasture in this situation must, of course, collect large quantities of this *web* and *dew*, and very often the spider itself. They act upon the horse, producing delirium, giddiness, apoplexy, and sometimes death. The lungs, he says, appear to be the principal seat of the disease; upon dissection, are found enlarged, covered with large brown spots, smell offensively, and have the appearance of mortification.

The large quantity of poison taken into the stomach, says the Doctor, acts upon its nerves, and by sympathy acts upon the large nerves of the head, which accounts for the dull, giddy and dejected countenance of the animal, and induced many to believe the disease was confined to that part alone. The poison is then removed from the stomach by the activity of the lymphatic and absorbent vessels, thrown into the circulation of blood, diffused over every part of the system, and finally carried by the arteries into the lungs, through which all the blood in the body of a horse passes many times in an hour and undergoes a change. Sometimes a *determination of blood to the head takes place, which generally ends fatally*, producing furious delirium, the horse throwing himself about with great violence making it dangerous for any person to venture near him.

So much for Dr. Mason's *Theory*.

Now for his

Symptoms.—The symptom of the staggers are drowsiness, inflamed eyes, half shut and full of tears, the appetite bad, the disposition to sleep gradually increased, subtleness, a continued hanging of the head, or resting it on the manger, rearing, falling and lying in a state of insensibility, walking a circle for a considerable length of time, the ears hot, with a burning fever, &c. &c.

Now for his

Remedy.—Take from the neck vein. a half a gallon of blood, three times a week; take of sassafras tea, three half pints; plantain juice, half a pint, assafœtida, half an ounce, saltpetre, one teaspoonful; mix and give them as a drench three mornings in a week; give an injection composed of one pint of meal, two quarts of water, one quart of molasses and one spoonful of hogslard—let the horse be moderately exercised, and whenever he is standing, should be well rubbed; give a mesh twice a week, composed of one gallon of bran, one table spoonful of sulphur, one teaspoonful of saltpetre, one quart of boiling sassafras tea, and an eighth of an ounce of assafœtida; not permitting the horse to drink cold water for six hours afterwards. Should he be much mended by this treatment, nothing more will be necessary, except feeding him on bran or a light food of any kind, but should he appear to receive no benefit from these attentions, in four or five days, take of *calomel* twenty-five grains, of *opium* two drachms, *camphor* two drams, powdered *fennel* seed one drachm, of syrup of any kind, a sufficient quantity to make the ingredients into a ball, which may be given every morning for four or five days, by which time the horse will get well, if his disease will admit of a cure.

And now for his

Preventive.—Horses that are confined in a stable never have the staggers; consequently it would be advisable for every person, whose situation will admit of it, to confine their horses, particularly at night, during the fall and spring months.

English Hogs.

[FROM THE GENESEE FARMER.]

The following description of English hogs, which we copy from the last American edition of the Edinburgh Encyclopædia, will be found to possess interest.

The *Berkshire* is a small boned breed and disposed to fatten quickly. It is the sort mostly fattened at the distilleries, and is good either for pork or bacon.

The *Chinese* breed, the size of which is small, and the flesh delicate, is to be met with in every country. It is the best adapted for using as pork, but is seldom cured into bacon, being too small for that purpose.

The *Gloucestershire* breed, which Mr. Marshall supposes to have been formerly the prevailing breed of the Island, is large but ill formed. Its colour in general is white. It is a very unprofitable sort, and is chiefly confined to the Gloucestershire, Shropshire and the west of Devonshire.

The *Hampshire* breed is very large, but not so compact as the *Berkshire*. They are white, well disposed to fatten, and come up to a great weight when properly managed.

The *Hertfordshire* is a large useful breed, but not by any means superior to either the *Berkshire* or *Hampshire*.

The *Rudgwick* breed, so called from a town of that name in Essex, on the confines of Surry, is supposed by Mr. Middleton to be the largest in the Island; feeding to an extraordinary size, and at two years old weighing nearly double or treble the weight of other sorts of hogs at that age.

The *Northampton* breed, which are reared chiefly in that country, are of a large size, but they do not fatten very kindly. The breed of *Shropshire* is nearly similar to that of *Northamptonshire*.

The *Swing-tailed* breed, are not very numerous. Their size is small; their form well proportioned. They are hardy and fatten to a good weight.

The *Bedford* breed is a variety of swine introduced some years since by the late Duke of Bedford, called the larger-spotted-Woburn breed. They are very prolific, hardy and well disposed to fatten, attaining nearly twice the size and weight of other hogs.

New Material for Making Pork.

[FROM THE CULTIVATOR.]

WE have long known that apples would fatten hogs, but until we received the following communication, it had never entered our mind, that *apple pomace* could be successfully employed for this purpose. The statement of our correspondent would have been more satisfactory, if the weight and value of the hogs in the spring, or previous to their having been put up to fatten, had been stated. There is little doubt, however, that the apple pomace contributed essentially to augment the quantity of pork, and the more so in consequence of the cooking process, and as it did so, was manifestly clear gain.

"While addressing you, permit me to give you an account of my experiment on hogs this season. On the 15th of October last, I shut up to fatten eleven hogs, about fifteen months old, and six shoats which were pigged on the 15th of May last, having given to the whole nothing during the summer but the wash from the dairy, with a small orchard of about an acre and a half of ground, where they ate the premature apples that fell. I proceeded to fatten them by steaming six bushels of small potatoes with fourteen bushels of apple pomace, and one hundred weight of buckwheat canal [bran,] the whole incorporated well together while hot from the steamer with a wooden pounder, adding to the mixture the dairy wash, and supplying them with a plenty of charcoal and pure water. They were divided into three lots, and closely confined. I continued to give them this mixture until nine days before they were killed, during which latter period they were fed with corn. They were slaughtered on the first of December. The expense of fattening and the product, in pork, pigs, &c., are as follows:

30 bushels small potatoes, at 2s. 1d. -	-	-	-	\$9 37½
8 cwt. buckwheat canal, 8s. per cwt. -	-	-	-	8 00
21½ bushels of corn given the last 9 days, -	-	-	-	13 43
Apple pomace, say, -	-	-	-	00 00
				<hr/>
Total expense of food, -	-	-	-	\$30 80½
				<hr/>
Cr. By 36 cwt. 50lbs. pork at \$5, -	-	-	-	\$182 50
50 roasting pigs, sold during summer, -	-	-	-	50 00
6 shoats sold alive, -	-	-	-	12 00
4 do. on hand, worth, -	-	-	-	6 00
				<hr/>
				\$250 50
Deduct expense, -	-	-	-	30 80
				<hr/>
Balance, -	-	-	-	\$219 70
Respectfully,				THOMAS MEDFORD.
<i>Ball Farm, Hyde Park, Jan. 1, 1835."</i>				

PART III.

MISCELLANEOUS INTELLIGENCE.

Corn Husks for Beds.—As soon as the husks of Indian corn are fully ripe, they should be gathered when they are dry in a clear air. The outer hard husks are to be rejected, and the softer inner ones to be fully dried in the shade. Cut off the hard end formerly attached to the cob, and draw the husk through a hatchel, or suitably divide it with a coarse comb. The article is then fit to use, and may be put into an entire sack as straw is, or be formed into a matress, as prepared hair is. Any upholsterer can do the work. This material is sweet, pleasant and durable.

From the bottom of our hearts, how we do wish, that our up-country tavern keepers to a man—yea, to a woman, too, would profit by this hint. Those of our readers who have been near smothering of a hot summer's night in the downy softness of their feather beds, should deem it a duty to circulate the above information. Cold and shivering as we have been of this blustering December day—we are absolutely in a perspiration at the bare recollection of one night spent in Greenville two summers since, with nothing cooler than geese feathers to rest upon—geese feathers in August—Oh ye people of Greenville!—*Editor.*

Horticultural Anomaly.—The shaddock fruit always contain 32 seeds. The seeds have been experimentally planted a number of times, and it is invariably found that there are never more than two out of thirty-two, that produce like fruit. The others produce, some sweet oranges, some bitter, and some the forbidden fruit, which are all, with the shaddock, varieties of the orange species. The leaves are similar in appearance, and until the trees are actually in bearing, it is impossible to know what the fruit is likely to prove.—*Gen. Far.*

Flower Markets.—These in Paris are held four times each week, during the summer, and form an object of great interest to both strangers and residents. At a reasonable early hour, on market day, may be seen here collected the most choice flowers and most beautiful women, the good taste of the one refined by the delicacy of the other. If such a market were to be instituted here and held beneath the shade of the graceful elms in our Mall, from 6 to 10 o'clock every Saturday morning, our florists would soon make it attractive to the beaux and belles, and would find a ready sale for their charming productions.—*Ib.*

Reply of a Farmer.—"I say," said a dandy to a sturdy farmer, "I say, I've got an idea in my head." "Well," replied the other, "If you don't cherish it with great care, it will die for want of companions."

Sunshine and Shade.—A manufacturer of carmine who was aware of the superiority of the French colour, went to Lyons for the purpose of improving his process; and bargained with the most celebrated manufacturer in that city for the acquisition of his secret, for which he was to pay £1000. He was shown all the process, and saw a beautiful colour produced: but he found not the least difference in the French mode of fabrication, and that which had been constantly adopted by himself. He appealed to his instructor, and insisted that he must have concealed something. The man assured him he had not, and invited him to see the process a second time. He minutely examined the water and the materials, which were in every respect similar to his own; and then very much surprised said, "I

have lost my labour and my money, for the air of England does not permit us to make good carmine." "Stay," said the Frenchman, "don't deceive yourself—what kind of weather is it now?" "A bright sunny day," replied the Englishman. "And such are the days," said the Frenchman, "on which I make my colour. Were I to attempt to manufacture it on a dark cloudy day, my results would be the same as yours: let me advise you, my friend, always to make carmine on bright sunny days." "I will," rejoined the Englishman, "but I fear I shall make very little in London."—*Sir H. Davy.*

Chemistry Applied to Agriculture.—It is stated that the celebrated chemist Lavoisier cultivated 240 acres of land in La Vendee on chemical principles, in order to set a good example to the farmers. His mode of culture was attended with so much success, that his crops amounted to a third more than those which were produced by the usual method; and in nine years his annual produce was doubled. Yet the generality of our yeomanry would as soon think of studying Hebrew, as the elementary principles of chemistry.—*Gibbon's Adv. of Sci.*

Deterioration of Silk Worms.—A superstitious notion formerly prevailed to a considerable extent that the eggs of the silk worm must be changed every two or three years to prevent the deterioration of the worm. This notion, like many others of the same class, is at war with reason and science. The supposition that good cocoons, after a few years, are no longer fit to produce good seed, is ridiculously absurd. The time has gone by when the idle and foolish theories of Buffon, Robertson, De Pauw and others, respecting the tendency of nature "to be little" and degenerate every thing in the new world, are received as truths. Facts also have settled the question that silk worms will not degenerate, except as a consequence of neglect, or the long propagation of those of diminutive size.—*Silk Culturist.*

Liquid Manure.—Liquid manure may be here [at Ghent] named, and very justly so, their *summum bonum*; as if applied when the corn is sprouty, or just before a rain, it has an effect which no other manure can have. It destroys insects, and throws a surprising degree of vigour into the crops. It is pumped [from the tanks under ground, into which it is conducted by drains from the stables, &c.] into a barrel-shaped water cart; and, when brought upon the land, the plug is taken out, and the liquid, flowing over a board something in the shape of a fan, as the cart proceeds, is dispersed on both sides, over a space, perhaps 4 or 5 feet. The cart has generally three wheels.—*Lon. Gar. Mag.*

Fence Posts.—An excellent method of rendering these durable in the ground, is published in the American Eagle. It consists, 1. In peeling the posts, and in sawing and splitting them if too large; 2. In sticking them up, under cover, at least one entire summer; and 3. In coating with hot tar, about 3 feet of the butt ends, which are to be inserted in the ground—after which they are ready for use. We have no doubt the advantages of this mode of preparation will more than remunerate for labour and expense. Our reasons for this belief are briefly as follows: The sap of all non-resinous trees, will ferment in the presence of heat and moisture, and cause the decay of the wood. To prevent this natural consequence, the first object should be, when a tree is felled, to expel the sap from the pores of the wood. This is done by peeling, splitting, sawing or hewing, and exposing the wood to the drying influence of the sun, or at least of the air. The process is facilitated too by immersing the wood in water for a time, which liquifies the sap, and favours its expulsion. And when the moisture has been expelled, the next object is to keep it out, by paint, tar or charring. In the mode recommended above, the moisture is expelled by the peeling, sawing and summer drying, and its return is prevented by the coating of tar. The retention of the bark upon the timber is particularly prejudicial, not only in preventing evaporation, but affording shelter to various species of the borer, which, under its cover, carry on its depredations upon the timber. We have seen pine logs nearly destroyed in a summer by worms, where the bark had been left on, while those which had been peeled remained uninjured. The best timber is obtained from trees which have stood a summer, or a year, after they have been girdled and peeled.—*Cultivator.*

To Cook Cauliflowers.—Cut it when close and white, and of a middling size; cut the stem so as to separate the flower from the leaves below it. Let it lie in salt and water awhile; then put it into boiling water, with a handful of salt. Keep the boiler uncovered, and skim the water well. A small flower will require about

fifteen minutes boiling—a large one about twenty. Take it up as soon as a fork will easily enter the stem: a little longer boiling will spoil it. Serve it up with gravy or melted butter.—*Gen. Far.*

To Cook Salsify or Vegetable Oyster.—There are various modes of dressing and cooking this vegetable. It is very excellent boiled and mashed up like squash or turnip, with a little salt and butter. Some make soup of it; in that case it should be mashed fine in order to thicken and increase the flavour of the soup. Others prefer it parboiled, and then sliced up and fried in batter, or without. A writer in the *Massachusetts Agricultural Repository*, observes that "In its taste it so strongly resembles the oyster, that when sliced and fried in batter, it can hardly be distinguished from it;" and adds, "If your gardeners would introduce it into market, and our citizens once try it, there would be no danger of its ever failing hereafter to be raised. It is in eating from November to May, precisely the period in which our vegetable market is most deficient in variety."—*Id.*

Johnny-Cakes.—A correspondent at Goshen, sends us the following directions for making superior Indian Johnny Cakes, with a request that they may have a place in the Cultivator.

"Take one quart of milk, three eggs, one tea spoonful saleratus, one tea cup of wheat flour, and Indian meal sufficient to make a batter of the consistency of pancakes. Bake quick, in pans previously buttered, and eat warm with butter or milk. The addition of wheat flour will be found to be a great improvement in the art of making these cakes. Those who have not got eggs will find that it will do very well without."—*Albany Cultivator.*

MONTHLY CALENDAR OF HORTICULTURE AND FLORICULTURE FOR JANUARY.

VEGETABLE GARDEN.

In this and the succeeding month we usually have our coldest weather, consequently there are but few things that can be planted in January, with any tolerable certainty of success. The industrious gardener, however, will find many things requiring his attention.

Peas.—In the early part of this month a crop of Peas may be sown, in a warm and sheltered part of your garden. Choose for this purpose the earliest and the hardiest variety. The rows may be three feet apart, and if sticks can be conveniently procured, they should be set in the rows in the usual manner.

If you have Peas sown in former months that are somewhat advanced, their growth will be promoted by having a little earth drawn up to their stems.

Cauliflowers and Broccoli.—These vegetables, especially the former, are at this time much endangered by frost. They may be protected in a great measure by binding bands of hay or moss around the stems, and about one-third of the leaves, and either tying the leaves together at the top, or placing there a small quantity of hay. The Broccoli only requires protection in very cold weather.

Beets.—Towards the close of this month you may venture to sow a few early Beets. Make your bed about five feet wide, which is to be well dug and pulverized. Draw drills about 12 inches apart, and an inch and a half deep, put 3 or 4 seeds together in a hole, one plant only, and that the finest being finally suffered to remain.

Onions.—Let your Onions have frequent hoeings, and the ground be kept loose. When considerably advanced, let the stems be twisted and pressed down with the hand, this will prevent the stalk from growing too large, and will increase the size of the bulb.

Leeks and Eschallottes.—These vegetables will, like Onions, require constant stirring, and be kept clear from grass and weeds.

Parsley.—This is usually considered the most favourable month for sowing Parsley seed. The seeds may be sown on some fine dry day towards the close of the

month, either around the edges of your beds, or in a separate bed. The variety called Curled Parsley is preferable to the other, although the latter, from some cause, (probably that of its being most hardy) is usually found in our gardens.

Celery.—Take the advantage of some dry day and earth up your Celery plants. Many of these will now be fit for use.

Winter Beans.—You may now plant in rows 4 feet apart, 5 or 6 inches in the row, and 2 or 3 inches deep—the Windsor or Mazagon Bean. These coming in the early spring, when few other vegetables can be obtained, will be found very acceptable.

Cabbages.—Towards the latter end of this month, you may sow a few Early York or Sugar Loaf Cabbage. Dig the ground a spade deep; the seeds may be thickly sown, and if the weather should become severe before the plants are out of the ground, you should strew some light litter over it. Should you have Cabbage plants of sufficient growth for transplanting, they should now be set out. (For directions see former months.)

Turnips.—Should you have good English Turnip seeds of the Early Dutch or Red Tops, a few may be sown as an experiment this month.

Spinach.—Although this is not the most suitable month for sowing Spinach seed yet, a few of the round leaf kind may be sown, as they will come early in the spring.

Endive.—On some dry day take the opportunity of preparing your Endive for blanching. Tie the top leaves of each plant together, and with a small hoe draw the earth around them. Some of them may be fit for use in 10 or 12 days after.

Radishes may be sown this month at intervals of two or three weeks for constant use. As the severe frosts are likely to destroy some of the young plants, the seeds should be sown somewhat thicker than usual.

Horse Radish.—This very useful vegetable is too much neglected in our Southern country. It is cultivated with great ease, and after the shoots have taken root requires but little attention.

Horse Radish is multiplied either from the small cuttings of the roots, say about 2 inches in length, or from the crowns of the old roots, taken off about half an inch below the top. They may be planted in rows 18 inches apart, 6 inches from each other in the row, and a foot deep. The plants will be fit for use in the following autumn, although it will be preferable not to dig up the roots till they are 18 months old.

FRUIT GARDEN.

This is a suitable month for transplanting Peach, Nectarine, and indeed all kind of Fruit Trees. Pruning may be attended to this month, although it is generally considered preferable to attend to this work at an earlier period.

Vines.—You may still prune the vines, but this work should no longer be neglected.

Raspberries.—This is the most suitable month for pruning your Raspberry plants; cut off the old wood, leaving several of the strongest young shoots, from which alone you have a right to look for fine fruit. Take off about one-fourth of each shoot. Should you be desirous of setting out new beds, you are enabled to do so from the superabundant shoots found on the old bed, these should be planted in rows 4 feet apart, and 3 feet in the row.

FLOWER DEPARTMENT.

You may now begin to transplant evergreens. *Geranium cuttings* may now be planted in the green house. It is not yet too late to sow Larkspurs, and the seeds of Biennial Stocks, or even Poppies.

ERRATA.

In page 40, line 14 from the bottom, for "*Unitarians*," read *Utilitarians*.